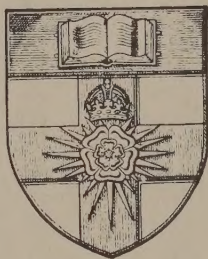
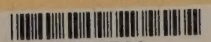


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—(10.)—

EAST INDIA—*continued.*

RAILWAYS; SANITARY REPORT; OPIUM COMMISSION.

Session

12 March 1894 — 25 August 1894.

VOL. LX.

1894.



ACCOUNTS AND PAPERS:

1894.

FORTY-SEVEN VOLUMES:—CONTENTS OF THE
TENTH VOLUME.

N.B.—*THE* Figures at the beginning of the line, correspond with the N^o at the foot of each Paper; and the Figures at the end of the line, refer to the MS. Paging of the Volumes arranged for *The House of Commons*.

EAST INDIA—*continued*.

Civil Service Examinations:

- [c. 7378.] Papers relating to the question of holding simultaneous Examinations in India and England for the Indian Civil Service. p. 1

Railways:

- [c. 7453.] Report on the Railways in India for 1893–94 by the Director General of Railways. 111

Sanitary Measures:

- [c. 7514.] Report on Sanitary Measures in India, 1892–93. Vol. XXXI. 371

Opium Commission:

- [c. 7313.] First Report of the Royal Commission on Opium, with Minutes of Evidence and Appendices. 583
-

EAST INDIA (CIVIL SERVICE EXAMINATIONS).

P A P E R S

RELATING TO THE

QUESTION OF HOLDING SIMULTANEOUS EXAMINATIONS IN INDIA AND ENGLAND

FOR THE

INDIAN CIVIL SERVICE.

Presented to both Houses of Parliament by Command of Her Majesty.



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CONTENTS.

Nature.	From	To	Date.	Page.
Despatch - -	Secretary of State -	Governor-General -	22 June 1893 -	3
Resolution of House of Commons.	(Enclosed in above.)		2 June 1893 - -	3
Despatch - -	Government of India -	Secretary of State -	1 November 1893 -	4
(Extract.)				
Letter - -	Secretary to Govern- ment of India (Home Department).	Government of Madras " Bombay " Bengal " N.W. Provinces and Oude. Government of Pun- jab. Chief Commissioner of Central Provinces. Chief Commissioner of Burma. Chief Commissioner of Assam.	5 August 1893 -	13
Do. - -	Government of Madras	Government of India	7 September 1893 -	23
Minute of dissent -	Hon. Mr. Garston, C.S.I.	- - -	6 September 1893 -	27
(Enclosed in above.)				
Letter - -	Government of Bombay	Government of India	7 September 1893 -	30
Do. - -	Government of Bengal	- - -	24 August 1893 -	33
Letter, Extract -	Government of N.W. Provinces and Oude.	Government of India	5 September 1893 -	37
Do. - -	Secretary to Govern- ment of Punjab.	- - -	28 September 1893 -	41
Extract from Note by Lieut.-Governor of Punjab	(Enclosure 1 in above)		23 September 1893 -	41
Extract from letter -	Punjab Government to Government of India	-	25 June 1888 -	56
	(Enclosure 2 in above.)			
Letter - -	Secretary to Chief Com- missioner, Central Provinces.	Government of India	15 September 1893 -	57
Memo. - -	Chief Commissioner, Central Provinces (Enclosed in above.)	- - -	7 September 1893 -	58
Letter - -	Secretary to Chief Com- missioner of Burma.	Government of India	25 August 1893 -	60
Note by Chief Commissioner, Burma -	- - -	- - -	18 August 1893 -	60
(Enclosed in above.)				
Letter - -	Secretary to Chief Com- missioner, Assam.	Government of India	25 August 1893 -	63
Memorandum -	Supplementary to the Despatch from the Government of India of 1 Novem- ber 1893.			65
Appendices to above Memo.	I.— <i>Cadre</i> of the Covenanted Civil Service in 1893 -			95
	II.—Actual employment of officers (other than natives of India ap- pointed under 33 Vict. c. 3. s. 6), on 1 July 1893.			96
	III. } Referred to in paragraph 30 of Memo. -			96
	IV. }			101
	V.—Referred to in paragraph 39 of Memo. -			102
	VI.—Referred to in paragraph 43 of Memo. (paragraph 60 of Public Service Commissions' Report).			104
Despatch - -	Secretary of State -	Government of India -	19 April 1894 -	107

Simultaneous Examinations in England and India for the Civil Service of India.

India Office,
London, 22nd June 1893.

Public,
No. 61.

**To His Excellency The Most Honourable The Governor General
of India in Council.**

My Lord Marquis,

I transmit herewith to your Excellency copy of a Resolution passed by the House of Commons as to the holding of simultaneous examinations in England and India, for the Indian Civil Services; and I request that your Government will give a prompt and careful examination to the subject, and that you will inform me in what mode, in your opinion, and under what conditions and limitations this Resolution could be carried into effect.

2. I need scarcely add that in asking to be furnished with the opinion of your Government, it is not my desire to fetter in any way their discretion as to the observations they may think fit to make on the Resolution.

3. I will only point out that it is indispensable that an adequate number of the members of the Civil Service shall always be Europeans, and that no scheme would be admissible which does not fulfil that essential condition.

I have, &c.
(Signed) **KIMBERLEY.**

ENCLOSURE.

Resolution of the House of Commons, 2nd June 1893.

Resolved.—That all open competitive examinations heretofore held in England alone for appointments to the Civil Services of India shall henceforth be held simultaneously both in India and England, such examinations in both countries being identical in their nature, and all who compete being finally classified in one list according to merit.

EXTRACT from LETTER, No. 62 of 1893, from the GOVERNMENT OF INDIA to the SECRETARY OF STATE, dated 1st November 1893. Received 17th November 1893.

We have the honour to reply to your Lordship's Public Despatch, No. 61, dated the 22nd June 1893, on the subject of a Resolution passed by the House of Commons as to the holding of simultaneous examinations in India and in England for the Indian Civil Service. Your Lordship has requested us to inquire carefully into the subject, and to report in what mode and under what conditions and limitations the Resolution could be carried into effect.

We desire to say at the outset that we are in entire agreement with the principle involved in the Resolution, so far as it implies that natives of India should be employed as extensively as possible in our Civil Services consistently with efficient administration and the strength and stability of British rule. We have every sympathy with the reasonable desires and legitimate aspirations of natives for employment in the higher branches of our Public Service; and it is hardly necessary to remind your Lordship that for more than 20 years the Government of India have been anxiously considering, not without substantial results, how the sphere of their employment can be enlarged, and under what conditions and to what extent the more responsible offices of the Administration can be reserved for or opened to them.

Although we had only recently completed our reorganisation of those departments of the Public Service to which the Indian Civil Service belongs, after a careful consideration, in communication with your predecessor and with Local Governments and Administrations, of the Report of the Public Service Commission appointed by Lord Dufferin's Government in 1886-87, we proceeded at once, on receipt of your Despatch, to consider the subject afresh from all its bearings. We consulted Local Governments and Administrations as to the practicability and expediency of giving effect in its entirety to the Resolution of the House of Commons; and we instructed them in the event of their finding that it was altogether impossible to adopt this course, to consider whether effect could be given to the Resolution in a modified form and subject to any conditions and restrictions. While in no way limiting their discretion as to any schemes which they might think fit to suggest, we placed before them certain alternative methods to which we were of opinion that consideration might be given.

We now forward for your information copies of our letter of reference (enclosure No. 1 with enclosure No. 2) and of the replies received from Local Governments and Administrations (enclosures Nos. 3 to 10).

The first of these recapitulates, in a summary form which we hope will be found convenient, the previous history of the measures taken to give effect to the policy embodied in the Statute of 1870 (33 Vict. c. 3. s. 6), of affording additional facilities for the employment of natives of India, of proved merit and ability, in the Civil Service of Her Majesty in this country; it recounts the recommendations of the Public Service Commission of 1886-87, the measures actually carried out on a consideration of the report of the Commission, and the discussions which have taken place on the special subject now referred to us—that of establishing simultaneous examinations in England and India for admission to the Indian Civil Service; and it concludes with such suggestions as seemed useful for the consideration of the Local Governments and Administrations in dealing with the application of the principle of competition to the recruitment of the Public Service in India.

We think that on a perusal of the replies enclosed it will be admitted that the Local Governments and Administrations consulted have responded to the call thus made upon them with a full sense of the momentous importance of the issues involved, and with an earnest desire adequately to discharge the weighty responsibility laid upon them by your Lordship's action upon the Resolution of the House of Commons. To use the words employed in your Despatch, No. 1, dated the 8th January 1885—"there is no question more intimately connected with the good government of India, and indeed with the stability of the Indian Empire, than the question of the best mode of recruiting the Civil Service." The papers thus contributed to the discussion will,

we doubt not, be read with the deepest interest as expressing the deliberate opinion of eminent men possessing great and varied experience of all parts of India, and of almost all spheres of official activity, and will receive at the hands of Her Majesty's Government the consideration to which they are entitled by the ability and position of the writers. We would specially call attention to the replies from the Government of the North-western Provinces and Oudh and that of the Punjab. Sir Charles Crosthwaite, as your Lordship is aware, has spent more than 35 years of his life in the service of Her Majesty in this country. After a long and ripe experience of the North-western Provinces, to which he has now returned as Lieutenant-Governor, he was chosen to be a Commissioner, afterwards Judicial Commissioner, and then (after a year's experience as Officiating Chief Commissioner of British Burma) Chief Commissioner in the Central Provinces. Having ruled those provinces for two years, he was in March 1887 entrusted with the still more arduous and responsible task of organising the Government and conducting the administration of Upper and Lower Burma—a task which for three years he discharged with conspicuous ability and success. Called thence to the Executive Council of the Governor General, he has now attained the highest office open to his Service, and speaks with the accumulated authority of his experience as District Magistrate, as Revenue Officer, as Civil and Criminal Judge of the highest Provincial Court, and as Governor of three Provinces. Sir Dennis Fitzpatrick's experience has been no less varied and extensive. In the course of nearly 35 years he has been District Officer in the Punjab, Secretary to the Government of India in two departments, Judge of the Punjab Chief Court, Chief Commissioner of the Central Provinces, Resident in Mysore, Chief Commissioner of Assam, and Resident at Hyderabad and Chief Commissioner of Berar; and now as Lieutenant-Governor he administers the great and important frontier province in which he began his career.

In view of the high importance of the issues involved in the present correspondence, and of the many misconceptions which we have observed to prevail among those who have taken part in the discussion, we have thought it useful, in order to avoid excessive prolixity in this Despatch, to add to the enclosures a memorandum (enclosure No. 11) in which are explained in detail certain points which it is essential to bear in mind in order to arrive at a correct conclusion on the questions raised. These points are:—(1) the nature and constitution of the Covenanted (or Indian) Civil Service—the posts which it is recruited to fill, the duties it performs, and the place it holds in the Public Service of the Empire; (2) the constitution and duties of the Provincial and Subordinate Civil Services, by which the detailed work of administration is mainly carried on under the guidance of superior authority, which are almost entirely Native Services, and which greatly outnumber the Indian Civil Service; (3) the Parliamentary legislation affecting the Indian Civil Service; (4) the history of the measures taken in recent years for extending the employment of natives of India in covenanted offices; (5) the measures taken to secure the employment of Indians in the Provincial and Subordinate Services; (6) the history of the competitive system as applied to the recruitment in England of the Covenanted Civil Service; and (7) the history of the competitive system as applied to the recruitment in India of the Provincial Civil Service. We beg that the memorandum may be read as part of this Despatch, and referred to whenever detailed information is required on any subject treated in it. So far as it is historical, it has been compiled after careful reference to previous records and correspondence; so far as it contains inferences and opinions, it expresses the unanimous conclusions at which we have arrived on the points discussed.

The Civil Service of India contains in its *cadre*, that is, it is recruited to fill, 898 posts in the Public Service. Of these, 74, as explained in paragraph 2 of the memorandum, are in special or technical departments, not concerned with the general, judicial, and executive administration of the country. In most of these departments—the chief exception being the Political or Foreign Department which deals with Native States and frontier tribes—the number of covenanted Civilians is small. There thus remain 824 posts, called covenanted posts, of which a full detail will be found in paragraphs 3 to 8 of the memorandum. These posts are not, however, all held by covenanted Civilians. Ninety-three have been entered in lists, published in April 1892 and January 1893, for transfer to natives of India belonging to the Provincial Service; and in the Frontier Provinces of the Punjab, Burma, and Assam, a proportion of one-fourth of the posts is reserved for military officers, whose special experience and training are considered necessary for the preservation of the peace in those tracts. Deducting the 93 posts assigned to the Provincial Service, the *cadre* of

posts at present reserved for covenanted and military officers is 731. These are the officers on whose administrative capacity and fitness for rule depends the quiet and orderly government of 217½ millions of people, inhabiting 943,000 square miles of territory. This bare statement of figures should, we think, be sufficient to convince any impartial mind of the supreme importance of obtaining the best material, in the best way, for the arduous duties which these officers have to perform. They represent the British Government in India; in the eyes of the people they are the British Government; it is to their personal influence, their impartiality, justice and efficiency, their physical and moral fitness, that the due administration of the Empire is entrusted; upon them, and not immediately upon military force, our strength rests; any weakening of their influence or deterioration in their efficiency would imply a relaxation of the restraints of government, and a reversion *pro tanto* to the conditions from which the country emerged only when it came into British possession.

With these preliminary remarks, we now pass to the consideration of the bearing of the Resolution of the House of Commons on the constitution of the Indian Civil Service.

We have first to call attention to the practical difficulties which would have to be overcome in introducing any scheme of simultaneous examinations for the Indian Civil Service in England and India. Your Lordship will perceive that this point has been touched on by the Governments of Madras, Bombay, Bengal, and the North-western Provinces and Oudh, and by the Chief Commissioner of Assam. Most of the authorities mentioned dwell upon the importance of the *vivâ voce* portion of the examination as a test of real knowledge, and on the impossibility of applying it uniformly, or at all, if the examination is not held at one central place. The Bombay Government and the Chief Commissioner of Assam question the possibility of maintaining the secrecy of the examination papers if sent out to this country; and it must be admitted that experience in University examinations in India tends to justify this apprehension. These objections, which Sir Anthony MacDonnell characterises as not "in themselves of a permanent or decisive nature," and which are, perhaps, not of first-rate importance, are nevertheless, in our opinion, entitled to considerable weight.

Secondly, in referring the matter for our consideration, your Lordship has pointed out "that it is indispensable that an adequate number of the members of the Civil Service shall always be Europeans, and that no scheme would be admissible which does not fulfil that essential condition." This condition, which is so obviously required by the necessities of our position in India that it is needless for us to discuss it further, is not indeed, so far as we have seen, disputed by those writers and speakers in this country and elsewhere who have advocated the principle of the Resolution of the House of Commons. But it appears to us that this condition, if conceded, is in itself destructive of the Resolution, which requires that "all who compete be finally classified in one list according to merit." Classification in one list obviously implies the admission of the competitors in order of merit, and without

reference to their origin and antecedents. The Statute* 21 & 22 Vict. c. 106. s. 32. under which the examinations are held, moreover, prescribes that "the candidates who may be certified by the said Commissioners * * * to be entitled under such regulations shall be recommended for appointment according to the order of their proficiency as shown by such examinations." The condition that "an adequate number of the members of the Civil Service shall always be Europeans," however, implies that a *minimum* proportion of that class, and a *maximum* proportion of natives of India, shall be fixed for admission to the Service. This point is strongly pressed by the Government of Madras, a majority of whom (Mr. Garstin dissenting) are the only authorities consulted who have expressed an opinion in favour of the principle of the Resolution. Their observations will be found in paragraph 10 of their letter: his Excellency the Governor in Council admits that "though a certain proportion has been named as the extent to which natives might without danger be advantageously employed, he is at a loss to suggest how such a system could be worked out." The same view is taken by the Governments of Bombay (paragraph 12), Bengal (paragraph 3), the North-western Provinces and Oudh (page 39), and the Punjab (page 53), and by the Chief Commissioner of Burma (paragraph 1). This objection appears to us unanswerable, if a minimum of Europeans is to be maintained, the competitors being, at the same time, classified in one list. We might find ourselves obliged either to give the preference to a certain number of

European candidates, not because they had shown most ability in their examination, but on account of their origin, or to admit Indian competitors in unlimited numbers, and regardless of the determined minimum of Europeans. We see no escape from this dilemma, and are therefore compelled to the conclusion that to give effect to the Resolution in its entirety is wholly incompatible with the "essential condition" on which your Lordship (and every other authority who, with adequate knowledge and responsibility, has discussed the subject) has so strongly insisted.

In the papers enclosed will be found the decisive opinion of the most capable administrators in India that no material weakening of the European element in the Indian Civil Service is at present compatible with the safety of British rule in this country. The Government of the North-western Provinces and Oudh writes (page 41)—

"The proportion of natives to Europeans in the Civil Service of India cannot be increased without risk to the safety of our dominion and the efficiency of the administration."

And again (page 39)—

"It is a great mistake to suppose that British India has arrived at a stage where nothing but smooth progress need be anticipated, or to think that the principles of law and order have penetrated the minds of the people so deeply that the English element in the Civil Government may be safely diminished. We know little of what is below the surface; but we know enough, even without the teaching of recent events here, in Bombay, and in Rangoon, to be sure that this is not a true estimate of the situation. It is instructive to observe that during the late riots in Bombay native papers like the "Hindu Patriot," while demanding in one column a larger share of administrative appointments for their fellow-countrymen, were calling out in another column of the same issue against the Government for not having more European police officers in Bombay. What is desired by them is that the British power should hold the country, while they administer it."

Sir Dennis Fitzpatrick has exhaustively discussed the question in pages 45 to 53 of his note. After insisting on the paramount obligation to maintain British rule, "inasmuch as it is the condition precedent to the performance of all the other duties we owe to India," he goes on to observe—

"British rule brought this country out of a state of chaos, the horrors of which it would be difficult for a stay-at-home resident of Europe in the nineteenth century adequately to realise, and if the grasp of the British power were relaxed even for a brief period over any part of the country, chaos with all its horrors would come again.

"Englishmen, even Englishmen who spend their lives in India, are not given to reflecting much on this; and I doubt whether many natives of the country now-a-days think of it, though it was a good deal present to the minds of the people of the Punjab when I first came to India.

"The fact is that we have now had 35 years of internal peace unbroken except by petty local disturbances, and we have begun to flatter ourselves into the belief that our position in this country is absolutely unassailable; but, as a matter of fact, it is not so. It is, and always will be, liable to disastrous shocks from which it might take a long time to recover; and though this is not a pleasant subject of reflection to us with our national vanity and our tendency to optimism, the more completely we realise it the better."

He then enumerates the various causes which might result in disturbance, more or less general, of the public peace:—the exacerbation of hostile feeling between rival sects of the same religious denomination; the recent riots—due to historic religious animosity, between Hindus and Muhammadans—in the Benares Division, in certain parts of Behar, in Rangoon, and Bombay, and the dangerous extent to which the resulting excitement has been aggravated by the Press, both Hindu and Musalman, and by other organised means of agitation.

He draws attention to the manner in which these mischievous falsehoods are now "disseminated all over the country by the native newspapers," and asks—"Who can say that in a time of excitement like the present they will not gain credence among

“ the ignorant masses, set the Hindus and Sikhs against us, and involve us in most serious troubles ? ”

He points out (page 46). how there are always to be found in many parts of India predatory classes ready to break out wherever our administration may be temporarily relaxed or our control disorganised.

He then states the ordinary problems with which the Indian administrator has to deal in the every-day government of his district, and explains what high qualities these demand ; and comes to the conclusion that it is impossible to say that for the purpose of such administration Indians are equal to Europeans. After examining the causes to which their inferior efficiency is due, he shows (pages 51, 52) that it is a mistake to suppose that the substitution of the former for the latter would be popular with the mass of the population ; the popularity of the measure would be limited to “ the advanced Indians, who still form, as Lord Dufferin said, but an infinitesimal fraction of the population.”

We beg to call special attention to these weighty opinions with which we entirely agree. It will be seen that the Government of Madras—the only advocate of the principle of the Resolution—admit that—

“ In special emergencies, local disturbances or the like, they [natives entering the Civil Service] might possibly sometimes be found wanting.”

They think, however, that “ in the present circumstances of India the mischief thus arising would rarely be serious, and could be quickly repaired.” From this view we have only to express our emphatic dissent. It may possibly represent the state of things in the tranquil province of Madras, but the conditions of other parts of India are far different.

Next, we desire to offer a few remarks on the opinions which have been stated, in the House of Commons and elsewhere, as to the effect of what are termed the “ pledges ” contained in section 87 of the Statute 3 and 4 Will. IV. c. 85., and in the declaration embodied in Her Majesty’s Proclamation of November 1st, 1858. This matter is discussed in paragraph 16 of the enclosed memorandum ; and some further observations upon it will be found in the opening paragraphs of Sir Dennis Fitzpatrick’s note (enclosure No. 7). The first of these passages merely announced the removal of a disability ; and the contention that it contained any pledge of the extensive admission of natives to the East India Company’s Civil Service is inconsistent with the machinery which the same Statute provided, in the provisions relating to the College at Haileybury, for entrance to that Service ; no native of India ever was, or could have been expected to be, nominated to Haileybury by the Directors of the East India Company. The second was expressly limited by the important words (which state your Lordship’s “ essential condition ” in another form)—“ *so far as may be.* ” In so far as the declaration contains a pledge, effect was given to it by Parliament, with a full knowledge of all the circumstances and after 12 years’ experience of the competitive system established by the Act of 1858, in the Statute of 1870, which was deliberately framed, in view of the disadvantages imposed upon Indians in competing at the London examination, to provide “ additional facilities for the employment of natives of India of proved merit and ability in the Civil Service of Her Majesty in India.” This Statute is in fact, as your Lordship pointed out in your Despatch of the 8th January 1885 (see paragraph 24 of the memorandum), “ the remedy provided by Parliament itself for any inconvenience or injustice which the natives of India might be shown by experience “ to suffer ” in consequence of the examination being held in London only. A full statement of the measures taken to give effect to the Act of 1870 is contained in Part IV. of our memorandum, from which it will be seen that its policy has been loyally accepted by successive Governments, that the fullest consideration has been bestowed upon the best means of carrying its provisions into operation, and that the condition of things embodied in the Orders of the 21st April 1892 and 7th January 1893 (Appendices III. and IV. of the memorandum), which have received the approval of Her Majesty’s Government, is generally considered by all the Governments and Administrations in India, with the exception of two members of the Government of Madras, as the best mode in which its intentions can be satisfied.

We need not reproduce here the weighty words of the Duke of Argyll in his Despatch, No. 3, dated the 8th April 1869, when he announced the policy of the measure which became the Statute of 1870 ; they are quoted in full in paragraph 3 of our circular of the 5th August last. We have only to say that we subscribe to every word of what he

then wrote, and consider that his anticipations have been most fully verified by the experience of the 23 years which have since elapsed.

Accepting the essential condition stated by your Lordship, the next question to be considered is the *minimum* extent to which the employment of Europeans (including in that term natives who have successfully competed in London) in the Indian Civil Service is indispensable. The orders at present in force fix that proportion at five-sixths of the *cadre* offices. And in the opinions enclosed your Lordship will find that this proportion is approved as suitable to present conditions by the Governments of Bombay (paragraph 11), Bengal (paragraphs 3 and 7), the North-western Provinces and Oudh (page 38), and the Punjab (page 52), and by the Chief Commissioners of the Central Provinces (paragraph 2), Burma (paragraph 2), and Assam (paragraph 3). In the last two provinces, however, the backward condition of the people as regards education prohibits the employment of natives in covenanted posts. In Burma natives of other parts of India, Mr. Fryer states, "are regarded with dislike and, he is afraid he must add, contempt by Burmans" "It is highly undesirable that natives of India should under any circumstances be deputed to serve in the higher executive appointments in Burma, and as yet no Burmans have succeeded in passing the competitive examination for the Indian Civil Service; and though there may be one or two exceptions, Burmans have not as a rule as yet acquired the educational qualifications necessary to enable them to pass these examinations." In Assam the difficulty arises mainly from the large proportion of European settlers and from the proximity of barbarous or semi-barbarous tribes; the natives of the province have not so far acquired the education or developed the strength of character which would enable them successfully to administer districts so situated.

The only dissentient is the Government of Madras, which, as at present constituted, considers that it would be sufficient if two-thirds of the administrative posts in that Presidency were held by Europeans. This opinion is, however, opposed to that which

* *Vide* paragraph 4 of the Madras Government's letter, No. 401, dated the 4th June 1890,—enclosure No. 9 of our Despatch, No. 39 (Public), dated the 7th June 1892.

the same Government expressed* in 1890, when we consulted them as to the number of posts to be assigned to the Provincial Service which was constituted by the Resolution of the 21st April 1892; and we are not at present prepared to accept it even for the Presidency of

Madras. No Native Civilian in Madras has until the last two months (when a temporary appointment was made) been tried in the executive charge of a district; only one has held permanently the post of District and Sessions Judge; and we consider that until further experience has been gained, by the employment of natives of the Presidency in the 15 covenanted posts which have under existing orders been thrown open to them, of their aptitude for such office, it would be unwise to make any change in the present arrangements.

Our answer to this question is, therefore, that it is indispensable that five-sixths of the *cadre* posts of the Indian Civil Service should for the present be held by Europeans or Indians who succeed in passing the competitive examination in London. We are indeed of opinion that the proportion of natives of India who succeed in entering the service by competition at the London examination requires to be closely watched; and we agree with Sir Charles Crosthwaite (page 39) that it may become necessary hereafter to restrict the total proportion of Indians in the service, as Lord Ripon's Government proposed, to 18 per cent. or some similar figure.

We now turn to the question whether it is desirable that the proportion of the covenanted posts—whatever it be—for which natives can be appointed in India, should be thrown open to competition, and if so, subject to what limitations. It will be seen that this question has been very fully discussed in the replies enclosed. The Madras Government alone is favourable to such a competition; and even that Government considers "that it would be sound policy to meet the objections stated, and to obviate the risk of the successful candidates being all of one race, by ruling that the natives of each Province should be confined to their own Provinces" (paragraph 6). This condition is also insisted on as necessary by the Governments of Bengal (paragraph 6) and the Punjab (page 53). Sir Dennis Fitzpatrick's observations on the subject sum up all that can be said in regard to it, and have our full concurrence. We hold with him that the natives of one part of the country would, from their dispositions, ways, and habits, not be well fitted to discharge the duties of a Civil Officer in another part, and that we should certainly avoid putting the subordinate officers of one Province under the control of a superior officer drawn from another. In the event of the

adoption of a system of unrestricted competition for the whole of India, there can be no doubt whatever that the successful candidates would, at least for some time to come, be found almost entirely amongst the Bengali competitors; and we share the apprehension which is, we believe, universally felt, as to the results which would follow from the intrusion of a numerous body of officials drawn from this source into the higher appointments of other Provinces. The remaining replies, objecting as they do altogether to selection by competition in India for covenanted posts, do not particularly refer to the matter; but it may be assumed that if any such scheme of competition were adopted, the writers would be in favour of restricting the examination to persons domiciled in the Province.

But any system of purely literary competition would, in our opinion, be open to the most serious objection. The literary test, and particularly that form of examination which is conducted upon paper, ignores and excludes altogether the consideration of many qualities which it is not only desirable, but essential that the men appointed to the Indian Civil Service should possess. The moral, social, and hereditary attributes of a candidate are, at least, of equal importance in the aggregate to the intellectual; and even the intellectual capacity is but partially tested in a paper examination in which memory may count for more than intelligence and reasoning power. This criticism, it may be said, applies equally to such examinations, wherever they may be held, whether in India or in England. The present system, however, under which no Indian candidates are likely to enter the service by competition except after a considerable period of residence and study in England, was obviously designed with the object of limiting this mode of admission to Indian candidates whose exceptional courage and energy had led them to proceed to England and to compete in that country, and who, to some extent at all events, had been brought within the influence of that wider form of education to which English schools and universities owe so large a measure of their success. Your Lordship will observe that, in the opinion of all, except the Government of Madras, the proposal under discussion would have the most unfortunate results. The Government of Bombay write (paragraph 18)—

“Its effect would be to limit the field of recruitment to untried men, at the same time that it would give a distinct advantage to competitors of a class well known in India, who combine the greatest aptitude for study with a marked lack of the qualities most needed in positions of responsibility.”

Sir Anthony MacDonnell considers (paragraph 6) that—

“It would be a public calamity if the improved tone of the Administration were to be destroyed, as it would be if any of the modes for admission into the Service, stated in the 21st paragraph of the letter under acknowledgment, were adopted.”

Sir Charles Crosthwaite, after fully discussing the matter, sums up his conclusions thus:—

“It is possible to fill the posts in the Civil Service of India reserved for natives of India by competitive examinations in India. But that system is inferior to the present method of recruitment, inasmuch as it will injure the present Provincial and Subordinate Services without giving us better men; and it is unjust, administratively bad, and politically dangerous, because it will exclude Muhammadans from the Service.”

Sir Dennis Fitzpatrick examines the question exhaustively in his note, and finally decides, for reasons fully stated at pages 53, 54, against any form of competition. The extract from Sir James Lyall's report of June 1888, which he encloses, gives the opinion in the same sense of a late Lieutenant-Governor “whose intimate knowledge of the Punjab and its people may, Sir Dennis Fitzpatrick thinks, be said to surpass that of any person now living.”

Mr. Woodburn writes (paragraph 6)—

“No native who has any stake in the country beyond a college diploma wants competition for the superior service.”

Mr. Fryer is of a similar opinion (paragraph 4)—

“I am quite sure that if the millions of India who take no part in political agitation could be consulted, they would by a vast majority elect to be ruled by

men who have risen in the Service by merit rather than by men of whom they know nothing and who know nothing of them, and whose only claim to be enlisted among the rulers of the land is that they have succeeded in passing a literary test."

We are entirely in accord with these authorities. The advantages of competition are confined to the selection of raw material for the posts to be supplied; it checkmates nepotism, and provides a general average of acquirement in the candidates so chosen. But until an officer so selected has been tried in practical work, his fitness is not fully ascertained; and in such work we have the means of putting him through a further examination, on the result of which his advancement to high office must, in every sound system of Government, depend. Competition, therefore, is, for the reasons pointed out by Sir Charles Crosthwaite (page 39), and Sir Dennis Fitzpatrick (page 54), only suitable for entering into the lowest grades of the Service. Further promotion, to such posts as the covenanted offices, would rightly fall only to those who had fully proved their fitness for it. In these offices we cannot afford the risk of failures. In recruiting Europeans we are, from the nature of things, compelled to select our officers at an early age and to trust to the practical training which they will receive to fit them for the higher offices of the State; but in regard to natives of the country we are under no such necessity, and it is obvious that there is no danger of nepotism.

We must not leave this part of the subject without pointing out that admission to the Civil Service by open competition in India might not improbably produce injurious results upon the quality of the European as well as the Indian members of that service. It is conceivable that, under a system of simultaneous examinations such as that proposed, cheap educational establishments might spring up in this country capable of producing a considerable number of successful candidates in a literary competition, from among the sons of English parents living in India and unable to afford the expense of educating their children at home. Such a result would, in our opinion, be a serious misfortune for the Civil Service. We have pointed out, in the memorandum enclosed with this Despatch, that the appropriateness of competitive examination, as a test for European candidates, has always been regarded as depending, in a great measure, upon the important fact that education in the United Kingdom at a large school or college embraces not merely a course of literary instruction, but also a training in life and conduct which forms the character. This condition would certainly not be fulfilled in the case of candidates of European descent, brought up and prepared for examination in this country. In this connexion, we may refer to the effect which the proposal would have in discouraging the better class of Europeans from competing in England for a service likely to be very largely composed of Indians. This point has been stated more at length, but with great moderation, by Sir Dennis Fitzpatrick (page 44).

The question what the results would be of a system of unrestricted competition, even if confined to natives of the Province, for appointment to covenanted posts, is one in regard to which there is hardly room for doubt. The matter has already been fully examined in the light of experience in Bengal, where the system prevailed, for entrance to the Provincial Service, for a series of years. Your Lordship will find in paragraph 46 of our memorandum a statement of the data thus afforded. In that Province, one of the most advanced in India from an educational point of view, Sir Steuart Bayley in 1889 held that—

"At the present time, and probably for many years to come, the immediate effect of recruiting the Subordinate Executive Service on an exclusively competitive basis will be to debar Muhammadans, natives of Behar, and natives of Orissa, from any reasonable chance of obtaining appointments. Not only would this be unfair in itself and contrary to established policy, but it would tend to encourage feelings of race jealousy and antagonism, which have already begun to show themselves, and which might at any time give rise to serious difficulties."

The most serious, perhaps, of all the objections to such a method for the recruitment of natives of India for covenanted posts is that it would, if the determined minimum of Europeans is to be maintained, involve the withdrawal from the Provincial Service of the proportion of such posts which was deliberately and publicly made over to that service only 18 months ago. This is the opinion of the Governments

of Bombay (paragraphs 20 and 21), Bengal (paragraph 6), the North-western Provinces and Oudh (page 39), and the Punjab (pages 54, 55), and of the Chief Commissioners of the Central Provinces (paragraphs 6 to 8) and Burma (paragraph 4). In Assam the question does not arise, as no covenanted posts have been thrown open to the Provincial Service. Madras is the only Province from which objections are raised to the existing Provincial Service; and we cannot but think, in view of the remarkable improvement in that service which is ascribed elsewhere to the enlargement of its prospects by the scheme set forth in the Resolution of April 1892, that the scheme and its probable effects there have been somewhat misapprehended by his Excellency the Governor in Council.

We will not lengthen this Despatch by further quotation, but will content ourselves by expressing full agreement with the view stated by the Duke of Argyll in his Despatch of the 8th April 1869, which is also the view held by the Public Service Commission of 1886-87, by the Government of India when considering that Commission's report, and by the Secretary of State when passing orders on it:—

"I have come to the conclusion that our duty towards the natives of India in respect to the giving them a larger share of employment in the administration of their own country is a duty which must be mainly discharged in India on the principle of careful and cautious selection. A more free employment of them in the Uncovenanted [now Provincial] Service, and promotion according to tried ability from that service to the Covenanted [Indian Civil] Service, would seem to be the method of proceeding least beset with difficulties and least open to objection. *This would, indeed, be a competitive examination of the best kind.*"

Finally, we would observe that much misapprehension appears to prevail as to the extent to which natives of India are already employed in responsible executive and judicial office. The facts will be found in Part II. of our memorandum; and from Part V. it will be seen that the Provincial and Subordinate Services are essentially Native Services, with only a sprinkling of Europeans in the former, who have been recruited for special and exceptional reasons (paragraph 39 of memorandum).

Taking the years 1870, 1881, and 1893 as convenient points from which the progress of the scheme for the freer employment of natives can be reviewed—the first because it was the year of the Statute 33 Vict. c. 3, s. 6, and the second because it was the year when the recruitment of the Indian Civil Service was reduced by one-sixth, the following table shows the distribution of the three Services in each of those years:—

	1870.	1881.	1893.
<i>I. The Covenanted Service, consisting of—</i>			
(1) Covenanted Civilians	890	900	898
(2) Military, Uncovenanted, and Statutory Civilians	331	221	216
Total	1,221	1,121	1,114
<i>II. The Provincial Service—</i>			
(1) Executive branch	576	726	1,030
(2) Judicial branch	583	679	797
Total	1,159	1,405	1,827
<i>III. The Subordinate Service</i>	962	1,368	1,908

It is to be remembered that between 1881 and 1893 the annexation of Upper Burma entailed a considerable demand for covenanted officers, and that the ordinary and inevitable increase in public business which has occurred in 23 years has called for reinforcements in almost every department of the Administration; yet the whole strength of the Covenanted Service (including military and other officers holding covenanted posts) is now seven less than in the former year, and 107 less than in 1870. In the Provincial Service there has been an increase since 1870 of 57·6 per cent., and in the Subordinate Service of 98·3 per cent. The number of Covenanted Civilians would, in spite of the annexation of Upper Burma, have shown a greater decrease but for a process which has been going on since 1870, of substituting, in the interests of greater efficiency, Indian Civilians for Military and Uncovenanted officers in the Non-Regulation Provinces. The European Service is, in our opinion, now at its *minimum* strength, and no further reduction will be practicable for some years to come. In the

event, however, of experience showing that in any Province or at any time the number of high native officers may be safely increased, we are clearly of opinion that the best course is to proceed under the Statute of 1870 and on the lines of the change which has just been accomplished. The principles on which the Provincial Service has been constituted should continue to be maintained; but (as shown in paragraph 35 of our memorandum) there is no finality about the lists of "covenanted offices" which have been thrown open to members of that service. These lists have been prepared with reference to proximate possibilities; but they are capable of alteration and expansion from time to time as circumstances may require or permit.

It may be convenient that we should briefly summarise the reasons for which we find ourselves unable to recommend to your Lordship the adoption of the proposal embodied in the House of Commons' Resolution:—

- (1.) No such concession is necessary for the fulfilment of the so-called pledges upon which the claim has been founded.
- (2.) The practical difficulties of introducing a system of simultaneous examinations would be extremely serious.
- (3.) It is conceded that, in order to ensure the efficient government of the country, a minimum of European officials is indispensable. Such a minimum could not be maintained in the event of simultaneous examination being resorted to in this country.
- (4.) It would be entirely out of the question to reduce the existing minimum of Europeans at the present time.
- (5.) Open competition is not the best way of selecting natives for the higher ranks of the service. It may be necessary in Europe in order to check nepotism, but in this case nepotism is impossible. Probation by actual employment forms a competitive examination of the best kind. Competitive examination in India would certainly have the effect of admitting a large number of competitors deficient in the qualifications necessary for the higher ranks of the service, and whose antecedents and origin would not be such as to command the confidence or the good-will of the classes for whose welfare they would be responsible; on the other hand, it would exclude the most valuable and capable assistance which the British Government could obtain from natives of India, in the Sikhs, Muhammadans, and other races accustomed to rule and possessing exceptional strength of character, but deficient in literary education.
- (6.) The proposed change would, unless the irreducible minimum of Europeans is to be diminished, involve the withdrawal of the appointments recently given, after the fullest consideration, to the Provincial Service, and would thus deprive that Service of the prizes promised to it, disappointing its hopes and lowering its efficiency by a sense of injustice.

From C. J. LYALL, Esq., C.S.I., C.I.E., Secretary to the Government of India, to the CHIEF SECRETARY to the GOVERNMENT of MADRAS, the CHIEF SECRETARY to the GOVERNMENT of BOMBAY, the CHIEF SECRETARY to the GOVERNMENT of BENGAL, the CHIEF SECRETARY to the GOVERNMENT of the NORTH-WESTERN PROVINCES and OUDH, the CHIEF SECRETARY to the GOVERNMENT of the PUNJAB, the CHIEF COMMISSIONER of the CENTRAL PROVINCES, the CHIEF COMMISSIONER of BURMA, the CHIEF COMMISSIONER of ASSAM. No. 27/1081-1088.

Home Department.

Public.

SIR,

Simla,
5th August 1893.

I AM directed to forward, for the favour of an expression of the opinion of His Excellency the Governor in Council His Honour the Lieutenant-Governor (& Chief Commissioner), a copy of a Despatch from the your opinion

Secretary of State, dated the 22nd June last, on the subject of a Resolution passed by the House of Commons as to the holding of simultaneous examinations in India and England for the Indian Civil Service.

The Resolution mentions the "Civil Services of India," but it is apparent from the discussions in the House of Commons and elsewhere that the "Covenanted Civil Service" or "Civil Service of India" is meant.

2. Before proceeding to state definitely the questions on which the Governor General in Council desires ^{the opinion of} ^{His Excellency the Governor in Council} ^{your opinion} His Honour the Lieutenant-Governor (& Chief Commissioner), I am to review

briefly the measures which have been taken in recent years for extending the employment of natives of India in offices ordinarily reserved for the Indian Civil Service. This letter, I am to explain, is not meant to be complete in itself; and it should be read side by side with the Report of the Public Service Commission and regarded as supplementary to the latter. It will not be necessary for the present purpose to go back to a period much before 1870; for the Statute of that year (33 Vict. c. 3. s. 6) was intended by its framers to provide the parliamentary remedy for the disadvantages under which native candidates labour in being compelled to go to England for the examination required for admission to the service.

It has not been overlooked that neither the Statute of 1861 (24 & 25 Vict. c. 54.) nor the Statute of 1870 is strictly applicable—with one or two exceptions—to appointments in the so-called non-Regulation Provinces; but, as the principle of both Statutes has now been extended everywhere, it will be unnecessary in this letter to distinguish between the Regulation and non-Regulation Provinces.

3. In 1868 the Government of Lord Lawrence proposed the establishment of a system of scholarships to assist natives of India to proceed to England for the purpose of completing their education and qualifying for the Civil Service and the professions. This system, in so far as its main object was to facilitate the entrance of natives of India to the Covenanted Service by competition in England, did not approve itself to the Secretary of State (the Duke of Argyll), who remarked that a Bill (subsequently passed as the Statute of 1870) was then before Parliament, which, if passed, would enable the Government of India to appoint natives to covenanted offices in India itself; and that, having regard to political exigencies, and to the circumstances of the various races and peoples inhabiting the country, a system of careful and judicious selection was required in respect of natives of India rather than the competitive system. In his Despatch, No. 3, dated the 8th April 1869, the Duke of Argyll said:—

"The question would then* arise whether education in England and success in a competitive examination is the only, or in all cases the best, test of fitness for office as regards the natives of India.

* *i.e.*, in the event of the Bill passing into law.

"This question involves very different considerations from those which have determined the adoption of the competitive system as applicable to Europeans. At home selection meant patronage, and patronage was distributed among friends and relatives. When patronage was abolished, open competition was the only alternative. Under the competitive system, although success does not in itself ensure aptitude for rule or official ability, yet there is at least a better chance of these qualifications being secured than under family or political patronage. And since Europeans have generally those qualities by which they have won, and still hold, the Indian Empire, the tests of competitive examination are, on the whole, good tests as between different candidates of the English race.

"But this principal cannot safely be relied upon as regards the natives of India. It is notorious that in their case mere intellectual acuteness is no indication of ruling power. In vigour, in courage, and in administrative ability some of the races of India most backward in education are well known to be superior to other races which intellectually are much more advanced. In a competitive examination the chances of a Bengali would probably be superior to the chances of a Pathan or a Sikh. It would, nevertheless, be a dangerous experiment to place a successful student from the colleges at Calcutta in command over any of the martial tribes of Upper India.

"And to these practical disqualifications of race must be added the not less serious difficulties which may arise out of the circumstances of rank and caste. Although the prejudices of caste are, we may hope, gradually giving way, they are still powerful; and although nothing should be done to encourage or to foster them, it would yet be in the highest degree imprudent to disregard their existence and their strength. The influence of rank and of social position is hardly less strong in many parts of India. So much do you recognise this to be the fact that in

your proposed scheme the majority of the scholars are to be selected solely with reference to this qualification. But this is an element altogether alien to the system of competitive examination, and it is not easy to see how it can be dealt with in perfect harmony with that system. In whatever degree the Government of India may be compelled by the social condition of the country to be guided in their appointments by such considerations, their action should be disconnected as much as possible with the tests of mere literary examination.

"On the whole, I have come to the conclusion that our duty towards the natives of India in respect to the giving them a larger share of employment in the administration of their own country is a duty which must be mainly discharged in India on the principal of careful and cautious selection. A more free employment of them in the Uncovenanted Service, and promotion according to tried ability from that service to the Covenanted Service, would seem to be the method of proceeding least beset with difficulties and least open to objection. This would indeed be a competitive examination of the best kind. But the wide diversities of character which prevail between different parts of India make it essential that each Province and race should be treated by itself.

"It should never be forgotten, that there should never be any hesitation in laying down the principle, that it is one of our first duties towards the people of India to guard the safety of our own dominion. For this purpose we must proceed gradually, employing only such natives as we can trust, and these only in such offices and in such places as, in the actual condition of things, the Government of India may determine to be really suited to them."

The Scholarship scheme was accordingly discontinued, and section 6 of the Statute of 1870 was passed to give effect to the policy (declared in its preamble) that "additional facilities should be given for the employment of natives of India of proved merit and ability in the Civil Service of Her Majesty in India." The Statute of 1861 (24 & 25 Vict. c. 54.) had reserved the offices described in its schedule exclusively for Members of the Covenanted Civil Service appointed in England by the Secretary of State; the Statute of 1870 for the first time empowered the authorities in India to appoint any natives of India (but no other persons) to such offices, although they might not have been admitted as Members of the Covenanted Civil Service. This power was to be exercised subject to rules to be prescribed by the Governor General in Council and sanctioned by the Secretary of State in Council; and for the purposes of the Statute the words "Natives of India" meant persons "born and domiciled within the dominions of Her Majesty in India of parents habitually resident in India and not established there for temporary purposes only."

The substance of the correspondence with the Secretary of State on the Scholarship scheme was communicated to Local Governments and Administrations in Home Department Resolution No. 5—25-32, dated 18th January 1870.*

} * Omit in letters to Barma and Assam.

4. The Rules framed in 1873 and 1875 under the Statute of 1870 are described in paragraphs 40 and 41 of the Report of the Public Service Commission.* The Rules of 1875 were found to be unworkable. This led Lord Lytton's Government to take up the question afresh, and, after a careful consideration of it in communication with Local Governments and other authorities and persons, they submitted a scheme to the Secretary of State in 1878, the main features of which were: (1) that a separate superior Native Civil Service should be constituted having the same status and position as the Covenanted Service; (2) that about 10 to 20 per cent. of the higher posts in the (then) Subordinate Executive and Judicial Services should be transferred to this new Service; (3) that about 15 per cent. of the covenanted posts in most Provinces should also be declared open to it; and (4) that the competition in England for the ordinary Covenanted Service should no longer be open to natives of India. The Secretary of State (Lord Cranbrook), however, negatived this scheme. The Despatches to and from the Secretary of State relating to it were not communicated to Local Governments, but they were published in a collection of parliamentary papers in 1879.

5. In the next year the Statutory Rules of 1879, dealt with in the 42nd and following paragraphs of the Public Service Commission's Report, were promulgated. They remained in force until they were superseded quite recently by the Provincial Service scheme. They provided, briefly, that a proportion of the recruitment for posts in the

* See Parliamentary Paper, C. 5327 of 1888.

Covenanted Service up to a *maximum* of one-sixth in each year (exclusive of military recruits for frontier non-Regulation Commissions) should be natives of India appointed in this country under the Statute of 1870. As a necessary arrangement for giving effect to these rules, and for making room in the covenanted grades for natives of India to be appointed under the new system, the number of candidates to be recruited each year in England was reduced by one-sixth from 1880. This reduction is still being maintained, the recruitment in England being conducted on a scale sufficient to man only five-sixths of the posts (exclusive of posts reserved for military officers) in the *cadre* of the Indian Civil Service.

I am to explain in this connexion that the figures given in paragraph 45 of the Public Service Commission's Report are merely estimates; the maximum number of Statutory Civilians who might actually have been recruited in each year was not a fixed number of 7·6, but a fluctuating number dependent on the number of recruits who actually came out from England. Until the Statutory system was condemned in 1886-87, the *maximum* number of appointments admissible under the Rules was actually made. This averaged six a year.

6. Another change of importance, which incidentally affects the present question, was made about the same time. The maximum age for the competition in England was reduced in 1878, with reference to the circumstances of European candidates studying in the United Kingdom, from 21 to 19 (paragraph 32 of the Commission's Report).

7. This reduction of the age-limit was considered to have operated unfavourably to natives of India, only one native candidate having passed the open competition in England under the new arrangements up to 1884. At the same time it was found that the working of the Statutory Rules of 1879 had not been attended with that success which had been anticipated. The system had failed because the Statutory Civilians appointed under it were not ordinarily persons who had been properly tried in previous Government service; and it was asserted that most, or, at all events, many, of them would have willingly joined the (then) Subordinate Services. Consequently Lord Ripon's Government reconsidered the whole question and formulated the following proposals, which were submitted to the Secretary of State in a Despatch, dated the 12th September 1884: (1) that additional facilities should be afforded to natives of India to compete in England by raising the age limits from 17-19 to 18-21, and by making certain alterations in the scheme of the examination in a direction favourable to native candidates; (2) that a proportion of the total recruitment of each year for the Covenanted Service, fixed at 18 per cent., should be reserved for natives of India; (3) that competition in England should be regarded as the primary method of recruiting Native Civilians; and (4) that appointment in India under the Statute of 1870 should only be resorted to as a supplementary method in order to make up any difference between the number of natives actually recruited in England and 18 per cent. of the total recruitment of the year. The Secretary of State, in his Despatch of the 8th January 1885, negatived these proposals on the grounds—among other reasons—(1) that it would be inconsistent with the nature of an open competitive examination to limit the number of native candidates who might be successful to 18 per cent. of the total number selected, if more of them should obtain places in order of merit; (2) that the competitive examination was established as a test between European candidates and adjusted to the conditions of English education generally, and that it could not be so manipulated as to give an advantage to natives of India or any other particular class of candidates; and (3) that the principle that the competitive examination should be regarded as the primary method of recruiting natives of India for the Civil Service, and appointment under the Statute of 1870 as a supplementary method, was not the correct principle, inasmuch as Parliament had enacted the Statute of 1870 expressly for the appointment in India of natives of India to such covenanted offices as they might be fitted for by their qualifications. "The Act passed in 1870," his Lordship observed, "is in fact the remedy provided by Parliament itself for any inconvenience or injustice which the natives of India might be shown by experience to suffer owing to the necessary adaptation of the examination in London to the circumstances of home-born rather than of Indian competitors for the Civil Service." He was accordingly of opinion that whatever modifications were required in the Statutory system of 1879 should be made under this Act. This correspondence is referred to in paragraphs 3 and 4 of the Government of India's published Despatch, No. 58, dated 9th October 1888.

8. Various proposals for improving the Statutory Rules were then considered by Lord Dufferin's Government, with the result that the Public Service Commission was appointed in 1886. Meanwhile, the Statutory system of 1879 was continued as a provisional arrangement; the principal change of importance made in the later years of its working was that there was an increased tendency to appoint as Statutory Civilian men of more advanced age who had already proved their merit and ability by good service in the subordinate departments.

9. The recommendations of the Public Service Commission are fully and clearly set forth in their report (especially in paragraph 77). I need only mention the chief principles underlying them. These principles were: (1) that the Statutory Service, established under the Rules of 1879, should be abolished; (2) that a "Provincial Civil Service" should be constituted from the higher ranks of the (then) Subordinate Executive and Judicial Services; and (3) that about one-sixth of the covenanted executive and judicial charges should be excluded from the *cadre* of the Covenanted Civil Service (which they suggested should be called the "Imperial Civil Service," but which is now called the "Civil Service of India" or "Indian Civil Service"), and declared open as a permanent arrangement to members of the Provincial Service. The Commission, in fact, recognised and adopted the tendency referred to in the last paragraph to appoint to covenanted offices persons who had already proved their fitness for such preferment by meritorious service in subordinate posts; and one of the chief objects of their proposals was to raise the status and dignity of the entire Provincial Service by holding out to its most distinguished members the prospect of promotion to the higher covenanted offices as the reward of merit and capacity.

10. The views of the Government of India (Lord Dufferin's Government) on the recommendations of the Commission will be found in their Despatch, No. 58, of the 9th October 1888, and the conclusions of the Secretary of State (Lord Cross) thereon in his Despatch, No. 104, of the 12th September 1889. These Despatches were published for general information in October 1889,* and copies of them were forwarded

	Madras	
	Bombay	
Government of Bengal		
to the	the North-western Provinces and Oudh	with Home Department letter
	the Punjab	
	the Central Provinces	
Chief Commissioner of	Assam	

.....
Omit in letter
to Burma.

No. 300,
301,
302,
303,
304,
305,
306,
dated 14th February 1890.*

The Provincial Service scheme recently instituted† closely follows the recommendations of the Commission. There are

† Home Department Resolutions, Nos. 9—1,342-52, dated 21st April 1892, and Nos. 7—47-49, dated 7th January 1893.

Home Department Notification, No. 2,159, dated 2nd November 1892.

practically only three material points on which it differs from the scheme recommended. In the first place, fresh legislation has not been resorted to, as was suggested, but the Statute of 1870,

which gives ample powers in this behalf, has been retained as the basis for the appointment of members of the Provincial Service to the "listed" posts (*i.e.*, covenanted posts declared open to the Provincial Service). Secondly, these "lists" have been drawn up not in any way as a permanent arrangement (as the scheme of the Commission contemplated), but with reference only to proximate reasonable requirements; and they are liable to modification and expansion from time to time according to varying circumstances and necessities. The number of posts listed at present is, therefore, somewhat below the number and proportion recommended by the Commission; but a larger number of posts, and especially of the higher offices, would not, under the necessary conditions of the Provincial Service scheme—or indeed under the scheme proposed by the Commission itself, which was to have been gradually worked up to during "nearly a generation of official life"—have become available for some years to come. Thirdly, as regards (1) Commissionerships of Divisions and (2) Memberships of the Board of Revenue and Financial Commissionerships—where these offices exist—it will be seen from the Despatch of October 1888 that the Government of India were not

prepared to amalgamate them with the Provincial Service. Appointments to these important offices are invariably made by special selection; but it is still open to the Government under section 3 and 4 of the Statute of 1861 (24 & 25 Vict. c. 54.) to appoint a member of the Provincial Service to either office, if he is selected for it. The Government of India considered that—for the present at any rate—it was better to rely on this power of exceptional appointment in the case of these very high offices than to list them as open to the Provincial Service, and thus to create expectations which certainly could not be fulfilled within any reasonable time.

11. As it appeared from a memorial received last year from the Indian Association that there was much misapprehension regarding the Provincial Service scheme, the Government of India caused a full explanation of it to be sent to the memorialists in my letter, No. 1,838, dated 22nd August 1892. A copy of this letter is enclosed for

the information of His Excellency the Governor in Council
His Honour the Lieutenant-Governor (and Chief Commissioner) .
your information

12. As regards the proportion of covenanted offices reserved for Indian recruits, the Provincial Service scheme makes precisely the same provision as the Statutory Rules of 1879. Under the latter rules about one-sixth of the *total number of recruits* each year (military recruits excepted) were appointed in India; under the new scheme one-sixth of the *posts* annually recruited for become available for transfer to the Provincial Service. The difference between the number of *recruits* appointed annually and the number of *posts* annually recruited for will be readily understood [by the Governor in Council
Lieutenant-Governor]. The number of *recruits* is, of course, always larger than the number of *posts*. The Statutory Civilians, for instance, were recruited so as (1) actually to fill the number of posts recruited for; (2) to provide an excess number of officers as a reserve for leave vacancies; (3) to furnish a certain number of officers merely in training and not yet sufficiently experienced to hold sanctioned posts. Under the Provincial Service scheme (2) and (3) are met from the general body of officers in that service holding posts other than those listed for transfer.

On these points, and in further explanation of the second point dealt with in paragraph 10 of this letter, I am to quote the following from paragraph 18 of Lord Cross's Despatch of September 1889 :—

“ While these lists will definitely indicate the higher offices which are recognised by the Government as the most suitable field for the employment of competent men of the Provincial Service, and in which nothing but unfitness should prevent them from being employed, the papers before me show that the time and extent of their admission to these offices are also definitely prescribed by certain circumstances which cannot be left out of account. With regard to the time, the Commission has admitted that the claims of the Covenanted Civil Service must defer for some years the full introduction of its scheme. I concur with the Government of Lord Dufferin that this preferential right must be accorded to the Covenanted Civilians and the other officers in the ranks of the several Commissions who entered the service before the reduction of recruitment in 1880. With regard to the extent of admission, the Government of India have rightly indicated in a passage which I have quoted that this question has already been solved by the reduction of recruitment for the Covenanted Civil Service in 1880, which satisfied the requirements of the Commission. In other words, the reduction of the Civil Service recruits by one-sixth, and the substitution for that one-sixth of natives selected under the Act of 1870, defines the maximum extent to which, under present arrangements, room in the higher offices will gradually become available for competent members of the Provincial Service. The reduction of the Covenanted Civil Service is already taking effect in respect of the sixth of the junior reserved offices; and, when it is completed, that service will cease to have any special claim to the same proportion of the reserved offices as a whole. On the basis of these considerations, it is practicable to calculate the number of reserved offices to which members of the Provincial Service may be appointed after existing prior claims have ceased through efflux of time, and the definiteness of the prospect thus offered to the Provincial Service is precisely what would be secured to it by the proposals of the Commission approved by the Government of India.”

[] Omit in letter to Central Provinces, Burma, and Asaam.

13. The competitive system for the recruitment of the Covenanted Service is dealt with in Chapter II. of the Commission's Report. The summary given shows that the system was designed as a test for European candidates, and that the scheme of examination was arranged with reference to the circumstances of education in the United Kingdom. The circumstances of natives of India have, however, been kept in view in subsequent modifications of the scheme so far as to ensure that there shall be no unfair obstacles in the way of their competing in England under the prescribed tests. In paragraph 60 of their Report the Commission considered and negatived the proposal for simultaneous competition in India; and in paragraph 64 they decided against the proposal for a separate competition for natives of India. Nor did they recommend the competitive system for making appointments to the covenanted offices to be thrown open to the Provincial Civil Service; their proposals contemplated a strict system of careful selection from among persons of proved merit and ability in Government service or (in the case of the Judicial Branch only) in the practice of the legal profession.

14. It will be noticed from paragraph 62 of the Report that the Commission considered from the point of view of native candidates the question of the age-limits for the open competition in England. They recommended a return to the original maximum of 23 in the interests of such candidates. This recommendation has been adopted, and, having regard also to the circumstances of European candidates, the age-limits for all alike have been fixed at 21-23.

15. I am now to give a brief account of certain cases appearing on the records of this office in which applications for an examination in India for admission to the Covenanted Service have previously been made and considered.

In 1868 the British Indian Association in Bengal submitted a memorial to the Secretary of State, praying that the examination might be held in India, and that a definite share of covenanted appointments might be thrown open to Indian competition. The Government of Lord Lawrence, in forwarding it to the India Office, remarked in their Despatch, dated the 13th June 1868, that they were "most desirous that no opportunity should be lost of admitting to a larger share in the administration of "this country natives of tried ability and character," but at the same time they expressed the opinion "that the adoption of the course which has been suggested in "this memorial would be highly inexpedient." A similar memorial had been submitted through the Government of Bombay by the Bombay Association. The Secretary of State (Sir Stafford Northcote), in his Despatch of the 14th October 1868, addressed to the Bombay Government (copy of which was enclosed in a Despatch to the Government of India in reply to the Bengal memorial) declined to accede to this request, having regard to the character and objects of the examination and to the fact that a Bill was then before Parliament (subsequently passed as the Statute of 1870) which would give an opening for the appointment in India of natives of ascertained fitness to such covenanted offices as it might be possible to fill otherwise than by competition. [A copy of this Despatch was forwarded to the Bengal Government under Home Department endorsement, No. 4,678, dated the 7th December 1868.] It was as the result of this correspondence that the Scholarship scheme referred to in paragraph 3 of this letter was proposed.

To Bengal only.

16. In 1876 the same Association in Bengal repeated their request on the ground (chiefly) that the contemplated reduction in the age-limit for competition in England from 21 to 19 would injuriously affect native candidates. The Secretary of State (Lord Cranbrook), in his Despatch of the 14th November 1878, expressed himself unable to accede to this request. The request as he remarked, resolved itself into a question of reserving a certain number of appointments annually for competition in India; and the Government of India were at that time in communication with him on the subject of reserving a proportion of covenanted offices for natives of India under the Statute of 1870, a reform which was subsequently effected by the Statutory Rules of 1879. [The Secretary of State's Despatch was forwarded to the Government of Bengal under Home Department endorsement, No. 79, dated 11th January 1879.]

To Bengal only.

17. In 1883 the Indian Association and two other local Associations in Bengal prayed that the limit of age for the competition in England might be raised, and that at least a portion of the appointments might be competed for in India. In reply to their memorials the Secretary of State transmitted a statement showing the substance of an answer given to a deputation which had waited on him with a similar request in England. In this answer it was explained that, in accordance with the Rules of 1879,

one-sixth of the annual recruitment was set apart for natives of India, and that "the proportion of one-sixth was certainly as high as the Government felt justified in establishing." [This reply was communicated to the Government of Bengal with Home Department endorsement, No. 1,001, dated 21st June 1884.]

To Bengal only.

18. In 1884 some further memorials were received chiefly praying for the raising of the age-limit for the competition in England; but in a few of them the question of competition in India was referred to. The Secretary of State, in his Despatch dated the 8th January 1885, observed that, so far as European candidates were concerned, there was no evidence which led him to think that the rules for the examination required alteration; and, as regards Indian candidates, he expressed the hope "that the mode of advancing natives of India to higher employment in the Public Service provided by Parliament in 1870 might be used so as to do full justice to their claims."

*This decision was communicated to the Government of Madras
Bombay with
North-western Provinces and Oudh
the Punjab

Home Department Letter No. 454,
455, dated 23rd March 1885.* As already explained, the
456,
457,

consideration of the measures to be taken for improving the Rules under the Statute of 1870 led to the appointment of the Public Service Commission.

19. Having given this brief history of the facts, I am now to state the definite questions on which the Governor General in Council desires to be favoured with an expression of the opinion of His Excellency the Governor in Council
His Honour the Lieutenant-Governor (and Chief Commissioner). The first and
your opinion

main issue to be considered is the proposal embodied in the Resolution of the House of Commons "that all competitive examinations heretofore held in England alone for appointments to the Civil Services of India shall henceforth be held simultaneously both in India and England, such examinations in both countries being identical in their nature, and all who compete being finally classified in one list according to merit."

I am to ask the Governor in Council
the Lieutenant-Governor to consider whether the adoption of this proposal
you
would be practicable and expedient, and whether the Resolution, in the form in which it stands, could be carried into effect. Before this issue can be decided, however, some of the points involved in the questions which follow will require consideration.

20. In paragraph 3 of the Despatch of June 1893 the Secretary of State observes that no scheme would be admissible which does not fulfil the essential condition that an adequate number of members of the Civil Service shall always be Europeans. And in his Despatch, dated the 15th July 1886, approving the appointment of the Public Service Commission, his Lordship had remarked:—

"It appears to me that many perplexing questions suggested by these papers might have become more easy of solution, and might be approached with more confidence, if a conclusion could be arrived at as to the approximate number of European public servants who must necessarily for the efficiency of the administration and political security of the Empire be maintained in each branch of the public service in India. If your Excellency in Council is led by the results arrived at by the Commissioners to form any distinct opinion on this point, I request you to communicate it to me for the consideration of Her Majesty's Government."

The second—and most important—question, therefore, on which I am to invite the opinion of His Excellency the Governor in Council
His Honour the Lieutenant-Governor (and C. C.), and on the answer to which the whole
your opinion

decision will depend, is this; What is the *minimum* proportion of Europeans who must, under present conditions, be employed in those offices which are in the *cadre* of the Indian Civil Service (including the *cadre* posts listed as open to the Provincial Services)? In other words, what is the *maximum* proportion of such offices which can be held by natives of India consistently with efficient administration and the strength and permanence of British supremacy in India? That such a proportion should be established has been accepted as a point of departure by most of the authorities who took part in the discussions recapitulated in the earlier paragraphs of this letter. Thus, under the scheme prepared by Lord Lytton's Government in 1878, it was proposed

.....
Omit in letter
to Bengal, Central
Provinces, Burma,
and Assam.

that about 15 per cent. of the covenanted offices in most Provinces should be amalgamated with the new Native Civil Service to be constituted; but this was coupled with a condition that natives of India should thenceforth be debarred from competing in England (paragraph 4 above). By the Statutory Rules of 1879 the *maximum* number of recruits to be appointed in India was one-sixth or $16\frac{2}{3}$ per cent. of the total recruitment (excluding military recruits); but admission to the service by competition in England was still left open to natives (paragraph 5). Lord Ripon's Government proposed in 1884 that the proportion of natives of India to be appointed in any year, whether by competition in England or in India under the Statute of 1870, or by both of these methods, should be fixed at 18 per cent. of the annual recruitment (paragraph 7). The Public Service Commission recommended that about one-sixth of the executive and judicial covenanted offices reserved for the Indian Civil Service (excluding the proportion reserved for military officers in frontier Provinces) should be declared open to the Provincial Service (paragraph 9). The Government of Lord Dufferin and the late Secretary of State accepted this proportion (paragraph 12).

I am to invite ^{the careful attention of his Excellency the Governor in Council} ^{your careful attention} ^{the Governor in Council} ^{Lieutenant-Governor} ^{you} his Honour the Lieutenant-Governor (and C. C.) to this question.

21. If the conclusion arrived at by ^{the Governor in Council} ^{Lieutenant-Governor} ^{you} is that the proposal for simultaneous examinations on the lines indicated in the Resolution of the House of Commons cannot, in its entirety, be carried into effect, the third question for consideration will arise, namely, whether any conditions or limitations could be devised under which the principle of competition might be adopted in recruiting natives of India in this country

for the Civil Service. To assist ^{His Excellency the Governor in Council} ^{his Honour the Lieutenant-Governor (and C. C.)} ^{you} in considering this question, I am to say that it seems to the Governor General in Council, as at present advised, to follow from what has been said in the last paragraph that any such scheme of competition which might be introduced would have to be made subject to the under-mentioned conditions and limitations:—(1) that the one-sixth of the covenanted offices listed as open, or available for transfer, to the Provincial Civil Service shall be withdrawn from that Service; (2) that not more than this one-sixth—or whatever other *maximum* proportion may be decided upon having regard to the answer to the second question—shall be offered for competition in India; and (3) that such competition shall be entirely separate from that held in England, and shall be regulated by rules under the Statute of 1870. Subject to these restrictions, which proceed on the assumption that it will still be left open to natives of India to enter the service by competition in England, three different methods of competition in India suggest themselves to the Government of India:—

- (1.) The examination might be a general one, open to all natives of India (as defined by Statute), the results being determined by pure competition, and the candidates who stand highest in order of merit being selected for service in all Provinces; or
- (2.) a separate examination might be held for each Province, open only to natives of India domiciled in that Province, the results being determined by pure competition; or
- (3.) a separate examination might be held for each Province open to natives of India domiciled in the Province, but with the condition that only a proportion of the vacancies (say one-half) should be filled by pure competition, and the balance by selection from among the candidates who had done fairly well in the examination, in such a manner as to give each class, race, creed, and section of the people, as far as possible, a fair share of the appointments.

I am to ask whether any of these methods commend themselves to ^{the Governor in Council} ^{you} ^{His Excellency in Council} ^{his Honour} ^{you} the Lieutenant-Governor as practicable and expedient; and, if so, which of the alternative methods would be disposed to consider most suitable to the present needs, aptitudes, and circumstances of ^{the Madras Presidency} ^{the Bombay Presidency} ^{his} ^{the Province under your} administration and its people. It will of course be understood that if a provincial competition should be decided upon, the number of vacancies would be too small to admit of an examination being held each year in every Province.

I am to add that in suggesting the point stated above for

the consideration of the Government of Madras
Bombay
Bengal
the North-western Provinces and Oudh
the Punjab the Governor General in Council

your consideration has no desire to limit in any way the discretion of the Governor in Council
the Lieutenant-Governor (and Chief Commissioner) as to
your discretion

any proposals which ^{he}_{you} may have to make with reference to the question dealt with in this paragraph. It has been suggested that it might be made a condition that every successful candidate examined in India shall proceed to England for the prescribed year of subsequent training. It will have to be considered whether such a condition can be accepted as an adequate substitute for an English education, or whether it could be made adequate by any practicable extension of the training after selection.

22. *The competitive system has for some years past been in force in the Lower Provinces of Bengal for recruiting the executive grades (Deputy Collectorships) of the Provincial Civil Service. The Government of India have received no special reports of

1884, Supplement to *Calcutta Gazette*, March 19th, page 478—Resolution dated 17th March 1884.

1885, Supplement to *Calcutta Gazette* February 4th, page 158—Resolution dated 3rd February 1885.

1886, *Calcutta Gazette*, March 17th, page 227—Resolution dated 16th March 1886.

1887, *Calcutta Gazette*, March 2nd, page 137—Notification dated 24th February 1887.

1888, *Calcutta Gazette*, April 11th, page 270—Resolution dated 10th April 1888.

1890, Supplement to *Calcutta Gazette*, March 12th, page 626—Resolution dated 11th March 1890.

1891, Supplement to *Calcutta Gazette*, July 22nd, page 1139—Resolution dated 20th July 1891.

1892, Supplement to *Calcutta Gazette*, June 1st, page 923—Resolution dated 25th May 1892.

1893, Supplement to *Calcutta Gazette*, May 31st, page 1055—Resolution dated 22nd May 1893.

its working, but the results of each year's examination from 1884 to 1893 (except 1889, when no examination was held) are shown at the pages of the *Calcutta Gazette* referred to in the margin. It is understood that up to 1889 the system was one of pure competition. In that year the Lieutenant-Governor, Sir Steuart Bayley, reviewed its working at length in the Resolution of the Bengal Government, dated 24th April 1889 (published in the Supplement to the *Calcutta Gazette*, May 1st, 1889, page 808 to 816). His Honour expressed the opinion that, considering "the diverse character of the population" it was necessary "to guard against a single race or class obtaining a virtual monopoly of the service,"

and that "the immediate effect of recruiting the Subordinate Executive Service on an exclusively competitive basis would be to debar Muhammadans, natives of Behar, and "natives of Orissa from any reasonable chance of obtaining appointments." The system was then altered from one of pure competition to one of mixed competition and selection, a proportion of the vacancies being offered to pure competition and the remainder being fill by the Lieutenant-Governor by selection from among candidates who obtain not less than a certain per-centage of the total number of marks in such a way as to distribute the appointments fairly among the different sections of the people.*

22. †The Government of India understand that a system of pure competition on the lines of the first or second of the methods described in the last paragraph was in force in the Lower Provinces from 1884 to 1889 for recruiting the grades of deputy collectors, but

¹ Supplement to the *Calcutta Gazette*, May 1st, 1889, pages 808-816.

that for the reasons given in the Bengal Government's Resolution of the 24th April 1889¹ it was altered in that year to a

system of mixed competition and selection closely resembling the third method.†

23. The fourth question for consideration—which is intimately connected with the third—is whether the introduction, in supersession of the existing arrangements of the competitive principle in any of the above methods, or in any other method which

the Governor in Council
the Lieutenant-Governor (and Chief Commissioner) may prefer to suggest as more suitable to local con-
ditions, would, in your

the opinion of His Excellency in Council
his Honour, be desirable or open to objection. It
your opinion

would (unless the *minimum* reserved for Europeans is considerably reduced) involve the removal of the listed covenanted offices from the Provincial Civil Service, and the door of promotion to the higher offices would consequently be closed to officers of proved merit and ability in that service. That service would, in short, revert to its former

status of a subordinate service. It is for the consideration of the Governor in Council
his Honour's consideration whether the
your consideration

.....
In all letters
except that to
Bengal.

†.....†
To Bengal only

competitive system would have any advantages over the existing arrangements; whether it would secure better men for these covenanted posts than Provincial Service officers of proved merit and ability promoted by selection; and whether it would be likely to attract to the public service a class of men superior to those who are now willing to join the Provincial Civil Service. Although the Provincial Service scheme was only established last year on a statutory basis, the intentions of Government were published in October 1889; it is for consideration whether any reasonable expectations have been formed by members of the service such as would make it necessary or desirable in justice to them to delay or to modify for the present the principle of open competition.

24. I am to say in conclusion that as the Secretary of State has desired the prompt attention of the Government of India to the subject of his Despatch, the Governor General in Council would be glad if your reply to this reference could be submitted so as to reach him at latest within a month from the date of receipt of this letter.

†The Government of ^{Madras} Bombay &c.,
Your predecessor

must have already considered most of the points dealt with in this letter in connexion with the inquiries of the Public Service Commission, and ^{the Governor in Council} the Lieutenant-Governor _{you}

†.....†
Omit in letter
to Burma.

will doubtless find materials ready to hand on which ^{he} _{you} will be able, within this time, to form an opinion, in the light of the remarks made in this letter and of recent experience, on the questions now referred for ^{his} _{your} consideration.†

25. §His Excellency in Council has not overlooked the fact that the Provincial Service scheme has not been ^{extended} _{fully extended} to ^{Burma} _{Assam}, and that therefore much of what is said in this letter is not applicable to the case of that Province; but as the first three questions referred for your opinion (paragraphs 19 to 21 above) affect ^{Burma} _{Assam} as well as other Provinces, he has considered it necessary to invite an expression of your views with regard to them. §

§.....§
To Burma and
Assam only.

I have, &c.

(Signed) C. J. LYALL,
Secretary to the Government of India.

From the CHIEF SECRETARY TO THE GOVERNMENT OF FORT ST. GEORGE to the
SECRETARY TO THE GOVERNMENT OF INDIA. No. 733, Public.

Sir,

Home Department,
7th September 1893.

I am directed to acknowledge the receipt of your letter of the 5th ultimo, No. 27-1081, Public, forwarding for an expression of the opinion of his Excellency the Governor in Council a copy of a Despatch from the Secretary of State, dated the 22nd June last, on the subject of a Resolution passed by the House of Commons to the effect that "all open competitive examinations heretofore held in England alone for appointments to the Civil Services of India shall henceforth be held simultaneously both in India and England, such examinations in both countries being identical in their nature and all who compete being finally classified in one list according to merit."

2. You explain that although the Resolution mentions the "Civil Services of India," it is apparent from the discussions in the House of Commons and elsewhere that the "Covenanted Civil Service" or "Civil Service of India" is meant and, after reviewing the measures which have been taken in recent years for extending the employment of natives of India in offices ordinarily reserved for the Indian Civil Service, you ask for the opinion of his Excellency in Council as to whether the adoption of the proposal in the Resolution would be practicable and expedient and whether the Resolution in the form in which it stands could be carried into effect. As a preliminary to the consideration of the subject, this Government is referred to the declaration of the Secretary of State, in paragraph 3 of his Despatch, that it is an essential condition of all schemes that an adequate number of members of the Civil Service shall always be Europeans

and the attention of his Excellency in Council is invited, in this connexion, to the question of the maximum proportion of offices in the *cadre* of the Indian Civil Service (including posts listed as open to the Provincial Service) which can be held by natives of India consistently with efficient administration and the strength and permanence of British supremacy in India. Should this Government consider that the proposal in the Resolution cannot be carried into effect, it is asked to indicate whether in its opinion any conditions or limitations could be devised under which the principle of competition might be adopted in recruiting natives of India in this country for the Civil Service.

His Excellency the Governor in Council has given this subject his most careful consideration and in reply to the questions raised in your letter I am to communicate the following.

3. In regard to the holding of simultaneous examinations in England and in India this Government is of opinion that such a course would be expedient if practicable, but that its practicability on the conditions laid down in the Resolution of the House of Commons—viz., that the examinations should be identical in their nature—can only be attained by the sacrifice, in a considerable degree, of the character of the present examination as a searching test, by the abandonment of the *vivá voce* portion. It would not be possible for the *vivá voce* examinations to be conducted as efficiently or thoroughly in India as in England. There are not in this country examiners of the calibre or experience necessary for carrying them out properly, such as are so easily to be obtained in England, and it would therefore be impossible to subject the candidates out here to that searching and exhaustive testing of their powers which, under the present conditions of the examinations, they have to undergo in England. This Government considers the *vivá voce* examinations to be most important for ascertaining the fitness and capacity of the respective candidates. Consequently, under the present condition of educational resources in this country, it is not apparent how examinations such as are now held and identical in their nature could be held simultaneously in England and in India. Unless therefore some means can be devised for overcoming the difficulty in connexion with *vivá voce* examinations, this Government sees no alternative but to do away with these in both countries. Such a course would, however, in the opinion of his Excellency in Council, be most objectionable and prejudicial to the interests of the Service.

4. As regards the expediency of the measure, it is evident from the tenor of the questions placed before this Government and from the arguments which have been used by the opponents of simultaneous examinations that it is admitted that under present arrangements natives of India are over-weighted, as compared with European candidates, in the competition held in London. This admission is implied in the assumption that, were simultaneous examinations conceded, the proportion of natives who would succeed would be largely increased, and in the contention that the change would be fraught with various dangers connected with such increase. The inequality in the conditions arises, not from the fact that the examination is adapted to test the education which is given to the best of English youth—for that merely means that a high, but not unnecessarily high, standard of instruction is demanded—but from the social conditions of native life and from the high cost, relatively to the general level of native resources, of a prolonged visit to England for the purpose of preparation for the examination with a chance only of ultimate success. It is not the richer classes in India who give high education to their sons, and to many families to send a promising youth to England means simply ruin in case of his failure. These circumstances operate as a disability in the case of native candidates which ought if possible to be removed. They render vain the solemn declaration of equal right of *all castes and races* to office in India.

5. This Government is by no means convinced, however, that the result of the concession of simultaneous examinations would be, as its opponents suppose, an increase in the proportion of native candidates selected. That proportion appears at present to be about 9 per cent. It is probable that fewer candidates would appear in England and that more native youths looking to the Civil Service would take their chance in India. But the educational facilities in this country are much inferior to those in England and the chances of candidates who might rely upon the former would be less. With the means of instruction here available, only young men of quite extraordinary capacity could hope for success. The number of native candidates would doubtless be enormously increased, but it is not so certain whether the number of successful candidates would be.

6. Assuming that the number of native civilians would be increased, there would not result from the men themselves any danger to British dominion. Their very existence would be bound up in the maintenance of British supremacy. The bulk of them would be employed in the ordinary executive and judicial offices, to the ordinary duties of which, given the high training guaranteed by the conditions of entry into the service, they may be expected to be quite equal. It is not the incumbents of these offices who determine the principles of administration and legislation which give a character of civilization and enlightenment to the Government. This depends upon laws and orders which, in the present day, district officers have not to initiate and create, but but merely to carry out. His Excellency in Council is of opinion that to secure the principles and character which it is essential to impart to the Government a smaller proportion of Europeans than now obtains in the Civil Service would be sufficient. But the execution in the current administration of the laws and orders laid down is no doubt as important to the final result as the initiation of them; and it is from this point of view that the objections to increase of natives in the Civil Service are most weighty. It is said that it would never do to put men, strong and precocious it may be in intellect, but morally and physically weak, in authority over races and tribes who care not for intellect but are to be subdued and kept in order only by men strong in will and energy. This Government considers that it would be sound policy to meet these objections and to obviate the risk of the successful candidates being all of one race by ruling that the natives of each Province should be confined to their own Provinces. Apart from the question of race-jealousies and class-hatreds, local men would possess a greater knowledge of the local vernaculars and customs and would be far more in touch with the people than those from other Provinces. There would not, moreover, be any idea of their being treated differently from their European *confrères*, for the latter are relegated to distinct Provinces and when once posted remain there during the natural term of their service. There is ample room for the employment of as many natives as are likely to succeed in Provinces and places where, even as they are now known, they would do very well: there is no reason to suppose that authority, power, and responsibility would fail, in the case of individuals of these races, to produce their usual effects of developing strength and energy. This Government does not fear that natives entering the Civil Service *under the conditions supposed* would be corrupt. In special emergencies, local disturbances or the like, they might possibly be sometimes found wanting, but in the present circumstances of India the mischief thus arising would rarely be serious, and could be quickly repaired. Against disadvantages of this kind is to be set the increased popularity of the service from the share of natives in it and in the higher administration, and this will be of great value in smoothing away difficulties of Government.

7. Another reason for altering the status and position of natives in the Civil Service is to be found in the fact that the new Provincial Service does not in any way satisfy their aspirations and wishes. It is evident that its introduction on the present lines has been a great disappointment to them, that it has relegated them to a distinct and limited service and, instead of placing them in line with the rest of the Civil Servants, has confined them to what they consider an inferior and subordinate position and that this has been accentuated by the designation which has been applied to them, a designation which they have always associated with a distinctly and well-recognised inferior branch of the service.

8. His Excellency in Council considers therefore that it is expedient to remove, by the institution of simultaneous examinations, the disabilities which now tend to hinder the entry of natives into the Civil Service proper. This step will remove an injustice, or what has almost the same consequences, a feeling of injustice, and it will not endanger the British supremacy or impair the character of the administration as a civilised and enlightened Government. It may possibly, in certain circumstances, weaken executive action; but the disadvantages in this respect are not so certain or so grave as to outweigh the advantages. The increase in the proportion of native candidates selected is moreover not likely to be so great as is supposed and it would be advantageous to remove the dissatisfaction and discontent which undoubtedly exists among the natives by some such measure as is now under discussion.

9. As regards the question of the minimum proportion of Europeans who must, under existing conditions, be employed in those offices which are in the *cadre* of the Indian Civil Service, his Excellency in Council considers that at present this Presidency could be efficiently administered if two-thirds of the Civil Servants

attached to it were Europeans. But though he believes that this should be the proportion just now, he is not prepared to say that it should not be open to revision before long. Fifteen years ago 15 or 16 per cent. was considered safe and proper, 15 years hence a considerably higher proportion might appear so. This will entirely depend on the progress of the natives in assimilating English notions and civilisation. They are changing with marvellous rapidity, and it is impossible to predict how far they will go. As their progress develops, it is, in the opinion of this Government, in the highest degree impolitic to deny to them opportunities of taking still further part in the administration of their own country. It is therefore thought that the prospect of the present proportion being considerably increased in the future may be contemplated with equanimity *if only the standard of qualification be not lowered.*

10. I am, nevertheless, to observe that this Government shares the objections pointed out by the Secretary of State in his Despatch of January 1885, summarised in paragraph 7 of your letter, relative to the question of limiting the number of natives who should be admitted to the Civil Service, while retaining the system of open competitive examinations. This is felt to be such a real difficulty that, though a certain proportion has been named as the extent to which natives might without danger be advantageously employed, his Excellency in Council is at a loss to suggest how such a system could be worked out. For, supposing these proposals are accepted and one-third of the recruits of any one year were to be natives, it is easy to conceive that the result of an examination would disclose an exactly equal number of Europeans and natives. In such a case a certain number of the latter who were the lowest on the list would have to be eliminated as being over the proportion, and the complement of Europeans made up by bringing in a number of those who were lower in the list to take the places of those natives who exceeded the proportion laid down. Such a proceeding would, however, not only be exceedingly unpopular but would also lay the Government open to the reproach that it had introduced into the service candidates admittedly inferior to others who had proved their superiority. The converse would also hold good, and natives low on the list might be brought in, while Europeans who had passed considerably higher would be eliminated because the proportion laid down for natives had not been attained.

11. Having indicated the views of this Government on the points referred to it in the two first questions of the Government of India and having pronounced in favour of giving effect to the Resolution of the House of Commons if a practicable and just method of doing so can be discovered, it is unnecessary to discuss the other points raised in paragraph 21 of your letter.

12. The Governor in Council considers, however, that in the event of the system of simultaneous examinations being adopted, the successful candidates should be required to pass two years at some English university. But in order that they should not waste their time there in idleness, presuming on their success in the examination in India, they should, in the opinion of his Excellency in Council, be called upon to pass periodical half-yearly examinations while in England, in addition to a final examination at the termination of their two years' probation, and this rule should be made applicable to successful European candidates also. But as recruits would under this arrangement enter on their career in the Indian Civil Service later in life than they do at present, this Government strongly recommends that the ages at which they should be permitted to come up for examination should be fixed at from 19 to 22. Otherwise this Government would not propose to in any way lower the standard or alter the character of the examination as it now stands. It is contended sometimes that, to suit native candidates, greater weight should be given in the scheme of examination to the Oriental classical languages so as to make them equal to the classical languages of Europe, and this matter is adduced as a source of injustice to native candidates. Even supposing this to be so, the paramount necessity of the case appears to compel a disregard of it. The Eastern classical languages may not be inferior as a means of intellectual training to Greek and Latin, but they are certainly far inferior as a preparation for the assimilation of modern knowledge and of Western ideas, and must therefore be assigned a lower place in any scheme of examination for the Civil Service. Sanskrit, Mathematics, Natural Science, History, Philosophy and Law are branches in which natives are under no disability and which afford them adequate chances of passing. English, which is highly marked, is an essential subject, and the natural disability under which natives labour in respect of it cannot be remedied. This seems, however,

to be only another reason for removing the artificial disability involved in holding the examination in London alone.

13. His Excellency in Council sees no reason for rescinding the provision by which the Government of India is enabled to appoint any native of India to any post on the ground of special merit and ability, but regards the retention of this power as absolutely essential in any scheme, and as one of the most valuable features of that of 1879. There are a number of natives who, in actual work, have given proof of very high capacity for administration, especially in the sphere of justice; no better natives could be obtained under any system of selection, and if there is no provision for their appointment to high office, the period when the natives will attain to an adequate share in the Government will be unduly postponed.

14. If the system of simultaneous examinations be introduced, and it is found possible to fix a certain proportion of natives of India for the Covenanted Civil Service, it appears to this Government that the *raison d'être* of the Provincial Service will cease, as the proportion of appointments thrown open to that service will become absorbed into that which may be agreed upon as the one to be reserved for natives under the new conditions. But whatever measure may be decided upon, due consideration must, it is held, be made for the Statutory Civilians, whether they have elected to join the Provincial Service or not, as well as for those who have recently joined the Provincial Service by competition or selection and to whom the expectation of being eventually appointed to certain specified listed posts has been held out.

15. I am directed to enclose a minute of dissent by the Honourable Mr. Garstin, C.S.I.

I have, &c.
(Signed) C. F. PRICE,
Chief Secretary.

Enclosure in above.

Minute of Dissent by the Honourable Mr. J. H. GARSTIN, C.S.I.,
dated 6th September 1893.

I regret that I cannot agree with some of the main conclusions arrived at by my honourable colleagues on the question of simultaneous examinations in England and India for the Indian Civil Service, and as there is no question (to quote the words of Lord Kimberley in his Despatch of January 8th. 1885) "more intimately connected with the good Government of India, and, indeed, with the stability of the Indian Empire than the question of the best mode of recruiting the Civil Service," I feel I should be failing in my duty if I did not place my views on record.

While I concur in thinking that it is quite impracticable to hold the open competitive examinations for the Indian Civil Service (heretofore held in England alone), both in India and England simultaneously, while maintaining their present character and holding identically the same examinations in both countries (owing to the impossibility of conducting the *vivâ voce* portion of the examinations by means of the same examiners), I question the expediency of doing so even if it were practicable.

I am not, however, prepared to assert that, if the character of the examination was completely altered, by the omission of all the *vivâ voce* portion, it might not be possible to hold simultaneous examinations both in India and England by means of printed papers only, but I consider that any such scheme is undesirable and cannot be defended on the ground of necessity or even of political expediency. In the first place, I hold that there should be only one door for entrance into the Indian Civil Service, subject, perhaps, in very exceptional cases, to the exercise of the power vested in the Government of India by the Statute of 1870. That door should be the open competitive examination held in London and all natives of India who present themselves for that examination should have resided for two or three years at least at an English University. I attach the greatest importance to this condition as a potent element in the formation of the character of such natives.

No doubt the natives of India suffer from some disabilities in competing for the Indian Civil Service examination in England. These are, mainly, the trouble and expense of going to England and residing there, combined with the risk of failure at the examination. But if the venture is crowned with success the outlay has been well invested, and even in the case of failure it is by no means all loss, for the competitor will, on return to India, be far better fitted for employment in the highest posts of the

Subordinate Service than if he had not gone to England, while it should, I consider, be made a rule that any such unsuccessful competitor who had done fairly well at the open competition, should be employed if he wished it, in the Subordinate or Provincial Service. This would greatly lessen the loss resulting from failure.

To the alleged disability based on religious grounds and conscientious scruples to cross the sea, I am not disposed to attach much, if any, weight, because this disability can hardly be said any longer really to exist. This is proved by the fact that numerous Indian Princes and Chiefs of high caste have gone to England and resided there for considerable periods without any loss of dignity or caste; while if further proof were wanting it is to be found in the fact that many of those who are most eager to have the simultaneous examinations carried into effect are perfectly ready, if their sons or other relatives succeed in passing the examination in India, to send them to England to reside for two or three years at an University, to the advantages of which training they are fully alive, thus showing clearly that the objection to crossing the sea on the score of loss of caste, as a reason for holding the examination simultaneously in the two countries, is an empty excuse. Moreover, there is a great revolution in thought, working like a ferment, in native society in southern (and I believe in most other parts of) India, in favour of social reform—one of the leading features in the programme being the wish to shake themselves clear of the ancient trammels on their freedom and progress imposed by sacerdotal prohibitions in the matter of crossing the sea, under the penalty of loss of caste. Matters, however, move

* "Until the repugnance of orthodox Hindus to cross the seas has lost its force, a time apparently still distant, the effect of a compulsory residence in England, either before or after selection, would be to exclude from these appointments the very considerable and important class of Hindus whose scruples still prevent them from adopting foreign habits and ways of life."

rapidly now-a-days, and a great change has come over native Indian public opinion during the last 10 years, so much so that the period looked forward to by Sir A. Lyall in his letter of July 16th, 1884, quoted by Lord Kimberley in paragraph 7 of his Despatch of the 8th January 1885,* may be said to have almost, if not quite, arrived. I hold, therefore, that no heed should any longer be paid to arguments based on this objection and that by so doing strong aid will be given indirectly to the cause of social reform in India.

Again, I cannot see how the abolition of the *viva voce* portion of the examinations, if simultaneous examinations are to be held in India and England, can be justified. The scheme of the open competitive examinations has from time to time been drawn up and modified to suit the altered ages of the competitors, but in every case by the Civil Service Commissioners, a body of gentlemen of the highest learning and educational experience in all England, and they have invariably included a *viva voce* examination as part of the scheme and as necessary to test thoroughly the knowledge of the competitors, and if this portion of the examination is abolished, not only will the Civil Service Commissioners be stultified but the examination will be spoilt as a test of knowledge, and the English competitors will be compelled to do without it and all simply in order to suit the convenience of a few native competitors in India through a feeling of mistaken sentiment. I say mistaken, because I cannot help thinking that an impression prevails to a considerable extent in England that there are many thousands of highly educated natives in all the Provinces of India who are now competent to pass the Indian Civil Service competitive examination but are debarred from doing so solely by the rule which compels them to go to England to compete for it. In my opinion this is a complete mistake—and I base my opinion on the facts connected with the competitive examinations which have taken place in Madras in 1890 and 1893 in connection with appointments to the Statutory and Provincial Services, the latter of which includes 15 of the appointments recently taken from the Indian Civil Service—and that the competition for these appointments was as keen as it possibly could be under existing circumstances. In 1890 one appointment was competed for, 33 competitors sent in their names, of whom 25 fulfilled the necessary conditions, three failed to appear before the Medical Board, and of the 22 examined 14 were disqualified by the Board as being physically unfit and only eight competed. In 1893 the figures were:—

Appointments competed for	-	-	-	-	2
Applications to compete sent in	-	-	-	-	22
Did not appear before the Medical Board	-	-	-	-	3
Disqualified by the Medical Board as physically unfit	-	-	-	-	11
Number who competed	-	-	-	-	8

These numbers are exceedingly small (considering that the population of the Madras Presidency is 39 millions, including the feudatory States, and that English education

is quite as advanced in Madras as in any other Province in India), and they are more likely to decrease than to increase when the standard of examination is raised to the level of that for the Indian Civil Service in London. Under these circumstances, and assuming that what is the case in Madras is pretty generally the case all over India, the sentiment to which I allude may, if it really exists, be well called mistaken.

My honourable colleagues are of opinion that the disabilities under which the natives of India lie in respect of competing for the open competitive examination render vain "the solemn declaration of the equal rights of all castes and races to office in India." I cannot agree in this view for the reasons already given by me, but I would take the opportunity of pointing out that the above declaration does not apply solely to the natives of India. It applies with equal force to British subjects all over the world, and if simultaneous examinations for the Indian Civil Service are held in India there may arise a demand for similar examinations in Canada, Australia, and New Zealand, the inhabitants of which might consider themselves hardly treated if the same concession was not granted to them, seeing that they labour under the same disability as the natives of India in having to undertake a long sea voyage to get to England in order to compete.

This difficulty is by no means a fanciful one—for gentlemen in Australia and other colonies are fully aware of the advantages attaching to a career in the Indian Civil Service and sometimes compete successively for the appointments, as is proved by the fact that one gentleman from Australia and one from Nova Scotia are now holding high offices in the Indian Civil Service in Madras.

In deciding the question whether any change should be made in the existing system in order to remove the disabilities under which the natives of India labour in competing at the open competitive examination in England, the main point for consideration, in my opinion, is whether it is to the advantage of the State and of the Indian Civil Service that the undoubted advantages resulting from two or three years' residence at an English University, prior to going up for the examination, should be sacrificed in order to remove those disabilities, and my opinion is that they should not. If the standard of examination is equally high in both countries and kept up to what it now is, the native competitor will get a much better education for the examination in England than he will in India, and will thus have a much better chance of passing it, while, if the scheme I have suggested of employing the unsuccessful candidates, who did well at the examination, on their return to India, is adopted, there will be very few who will be losers by going to England and trying to pass the examination. I would not, however, extend the same privilege to those who failed to pass the examination in India. I even think it would be good policy to give scholarships to young natives of India who wish to go up for the Indian Civil Service examination in England, conditionally on their going to an University for two or three years before going up for the examination.

As to the minimum proportion of Europeans who must, under present conditions, be employed in those offices which are in the *cadre* of the Indian Civil Service, including the *cadre* posts listed as open to the Provincial Service, I consider the minimum should be fixed at two thirds. I am further strongly of opinion that the *cadre* of appointments open to the Civil Service should be increased by the addition of a number of Sub-Judgeships or Assistant Judgeships to afford schools for training civilians in judicial work. Then, if one-third of the whole number (but not necessarily of each class of appointments) were held by natives of India who had successfully passed the Indian Civil Service examination in London, I think they would have an adequate share in the administration of British India. To carry out this plan it would be necessary to arrange that one-third of all the appointments to be annually competed for should be allotted, as considered necessary, among the various Provinces of India, and should be competed for only by natives of those Provinces. This plan is open to some of the possible objections raised against such a scheme in paragraph 10 of our letter to the Government of India—but if the Act of Parliament regulating the examinations was altered, these objections could probably be faced or got over. In any case, the same objections might be urged against the results of simultaneous examinations in India and England if a proportion of the appointments were given for competition in each country. The Provincial Service should at the same time be abolished. It has not given much real satisfaction.

(Signed) J. H. GARSTIN.

From G. W. VIDAL, Esquire, I.C.S., Acting Chief Secretary to the Government of Bombay, to the SECRETARY TO THE GOVERNMENT OF INDIA, Home Department, Simla. No. 6454.

Bombay Castle,
7th September 1892.

Sir,

I am directed to acknowledge the receipt of your letter, No. ²⁷1082, Public, of the 5th August 1892, forwarding for the opinion of his Excellency the Governor in Council a copy of a Despatch, dated 22nd June last, from the Secretary of State on the subject of the Resolution passed by the House of Commons as to the holding of simultaneous examinations in India and England for the Indian Civil Service, and to reply as follows:—

2. The proposal embodied in the Resolution of the Commons House of Parliament is, I am directed to observe, a new departure involving, if effect be given to it, an abandonment of the principles accepted by successive Secretaries of State,—as summarised in paragraphs 2 to 18 of the letter above quoted,—and only recently affirmed on the report of the Public Service Commission in a form designed to be a deliberate and final settlement of the question.

3. Under these circumstances it appears to his Excellency the Governor in Council that the proposal cannot be adopted without inconsistency, except as a means shown to be well adapted in itself to the attainment of some definite and desirable object, and free from obvious risk of producing collateral results which may prove to be not merely undesirable, but dangerous.

4. Apart from a vague feeling of sympathy with the very natural aspirations of natives of India—a feeling which is shared to the full by the official classes in this country, but which can hardly be regarded as a satisfactory basis for serious political action,—the object underlying the resolution must apparently be either to remedy some supposed departure in the existing arrangements for the admission of natives into the Civil Service of India from the cardinal principle of equality of treatment of all classes of Her Majesty's subjects without reference to caste, colour, creed, or birthplace, or else to give more complete effect to the converse principle that natives of India have, as such, an equitable claim to something more than equality of treatment in regard to the share to be allotted to them in the administration of their own country.

5. As regards the first of these alternatives the proposal would, in the opinion of the Governor in Council, have the effect of impairing rather than of perfecting such equality of the conditions of recruitment by competition as is possible in the nature of things. Indian candidates are, it is true, at a disadvantage as compared with candidates resident and educated at home, in as much as they have to be examined in a foreign tongue and to travel to and reside in a country distant from their own under conditions which are frequently repugnant to their religious and caste prejudices. But these disadvantages differ only in degree from those which any candidate comparatively poor or brought up under conditions which cut him off from the facilities and temptations of life in the great centres of population and education might plead as telling against him in competition with candidates trained at the Universities or at preparatory establishments in London. If competition is to be absolutely free and open, it obviously cannot take cognizance of any disabilities or disadvantages, such as those indicated, which are personal whether to particular competitors, or to particular classes of competitors. All that can be done is to lay down such preliminary qualifications in regard to age, character, physique, and so on as are essential, apart from race, creed, or colour, and to see that all candidates possessing those qualifications who present themselves at the examination room are examined under conditions as nearly as possible identical.

6. It has been urged, and urged with much reason, that a training after European methods should be regarded as a necessary qualification for admission to a service the *raison d'être* of which is to ensure that our Indian Empire shall be administered in consonance with Western ideas and principles. But even apart from this, Indian candidates have no more right, so far as equality of treatment is concerned, than candidates from Canada, the West Indies, Australia, or the Cape, or even, in a less degree, than candidates from Scotland or Ireland to complain because the examination for admission to an Imperial service is held at the capital of the Empire.

7. The identity of the conditions of examination above insisted upon can only be secured, even approximately, by having a single centre, and by employing the same examiners to examine all candidates in the same subjects orally as well as in writing. Examinations in which candidates are merely required to pass a certain standard may be and are held simultaneously at more than one centre. But that is a plan which, so far as this Government is aware, has never been regarded hitherto as compatible with the principle of open competition for places in order of merit—even in England, and the objection to it as involving a departure from the conditions of equality above laid down would be magnified to an extent which it is hardly possible to estimate in the case of an examination conducted simultaneously at two centres so widely separated as England and India. Apart from the impossibility of securing identity of standard in the oral examination, there is the further difficulty of ensuring that the contents of the papers shall not leak out during the long time which must elapse between their preparation and their submission to the candidates. Judging by actual experience both of our examining bodies and of the manner in which the contents of important official communications become known to the public before they reach India, there is reason to fear it would be a practical impossibility ever to be sure that the secret of the questions had been kept both in England and in India, and that the results of the examinations were in any way reliable.

8. Assuming that these difficulties were overcome, the effect of a simultaneous examination held in India, regarded from the standpoint of equality of treatment, would simply be to give to the natives of India an advantage in the conditions of the competition to which they have no legitimate claim.

9. As regards the second alternative, I am to point out that it is already the avowed policy of Government to give to natives of India as large a share in the administration as is consistent with the maintenance of its essentially European character and of our own practical supremacy. The question how best to carry out that policy is, no doubt, one of considerable difficulty, and the proposal, regarded as a possible solution of that question is entitled to the fullest consideration.

10. In paragraphs 19 and 20 of your letter, two definite questions have been raised, *viz.*, what is the minimum proportion of Europeans who must under present conditions be employed in appointments of the kind hitherto reserved for or commonly held by members of the Covenanted Civil Service of India; and whether the proposal embodied in the Resolution of the House is compatible as it stands with the conditions laid down in paragraph 3 of the Secretary of State's Despatch, and admitted on all hands, even by the natives themselves, to be essential, that an adequate number of the members of the service, that is not less than the proportion which may be laid down as the minimum, shall always be Europeans.

11. With respect to the first of these questions, I am to state that the Governor in Council sees no reason to differ from the conclusion arrived at by the Public Service Commission, and adopted as the basis of the arrangements now being worked out for the formation of the Provincial Services, that at least five-sixths of the officers in the *cadre* of the Indian Civil Service (including the *cadre* posts listed as open to the Provincial Services) must be reserved either for Europeans or for natives Europeanised by training for competition in England. So long as the entrance to the Civil Service or to a limited number of posts in that service, is by an open competitive examination, it is not possible to fix absolutely the proportion to be held by Europeans as distinguished from natives. But it must be assumed that in the conclusion above referred to allowance has been made for the share of the appointments filled by competition in England which natives of India have hitherto succeeded in gaining. In the opinion of this Government, therefore, the reply to the question is that the minimum proportion of appointments to be reserved absolutely for Europeans should be five-sixths, *minus* such a deduction as may correspond to the share of the appointments filled by open competition in England, since recruitment was reduced on the introduction of the statutory service scheme in 1880, which have fallen to natives of India. So far as this Presidency is concerned that share has been 3 appointments out of 69.

12. As regards the second question, the adoption of the Resolution of the House in its entirety appears to this Government to be obviously and absolutely incompatible with the condition that either five-sixths or any other proportion of the members of the service that may be fixed upon as adequate shall always be Europeans.

13. It is not necessary to assume that English competitors of the class who obtain admission to the service under existing arrangements are inferior on the average in intelligence or attainments to the candidates who would be pitted against them in an Indian examination room. But it is not impossible, having regard to the admitted capacity of large classes of the natives of India for the acquisition of book knowledge of the kind that tolls in examinations, as well as to the growing number of educated natives to whom admission to the service would be an object of the keenest ambition, that European competitors might find themselves at a serious disadvantage in a competition conducted under conditions which would certainly lead to their being largely outnumbered by Indian competitors of the highest class the educational resources of this country can turn out. It is, besides, impossible to foresee what effect such a change in the conditions of competition would have on the class of English candidates. There seems good reason to fear that the best men would speedily cease to compete, and that the ultimate result would be to hand over the service practically to natives educated in India with perhaps a sprinkling of Europeans of good abilities, but of inferior social status.

14. The modification which, while guarding against the possibility of such a result, would involve the least divergence from the central principle of the Resolution, would be to hold simultaneous examinations and arrange all candidates in one common list in order of merit, but subject to the condition that natives in excess of one-sixth of the total number of vacancies offered for competition would be passed over in favour of the Europeans next below them in the list, and conversely that Europeans in excess of five-sixths would be passed over in favour of natives, natives who may compete in England being for the purpose of this arrangement counted as Europeans.

15. The question then arises what advantage this or any other modification of the proposal would possess, in the eyes of the natives or otherwise, over the Provincial Service scheme as described in the letter from the Government of India to the Government of Bengal, No. 1,838, of 1892, which accompanies the present reference.

16. It would certainly, in the opinion of the Governor in Council, have this advantage, at any rate in the eyes of native aspirants, that those who succeeded would become members of an Imperial service, entitled presumably to a scale of pay designed to counterbalance the drawbacks of an Indian career in the eyes of the highest class of English candidates for official employment, instead of remaining members of a Provincial Service remunerated at the lower rates appropriate to the case of natives of India serving in their own country. Whether this would be an advantage in the eyes of the economist, or of the native taxpayer, is of course a different question.

17. Another result which would probably be of some value in the estimation of native candidates is that under the scheme proposed in the Resolution, those of them who were successful would take rank in order of merit along with European candidates, with choice of their Presidency or Province as long as a choice remained, instead of in a class apart from and below the European candidates selected in the same year, as is presumably intended in the schemes suggested by the Government of India. But here again it is the general interest of the community and of the administration that must be considered rather than the views of the comparatively very limited class who aspire to appointments. Those views are important only in so far as they may possibly affect the quality of the recruits; and it is by the degree to which it is adapted to secure recruits of the stamp most likely to maintain and improve the tone and efficiency of the service that any scheme of recruitment must ultimately stand or fall.

18. Regarded from this point of view, the simultaneous examination scheme is open to the grave objections to which attention is called in the Duke of Argyll's Despatch quoted in paragraph 3 of the Government of India's letter. Its effect would be to limit the field of recruitment to untried men, at the same time that it would give a distinct advantage to competitors of a class well known in India, who combine the greatest aptitude for study with a marked lack of the qualities most needed in positions of responsibility.

19. This is an objection which may be taken to the whole principle of selection by competition. But it is tenfold stronger in India than in England. It is very imperfectly met, so far as Indian candidates are concerned, by the necessity now imposed on them for undergoing an English training as a preliminary to the chance of selection. It would not be met at all by any scheme for compulsory residence or study in England *after* selection. The Governor in Council does not deny that such residence would be

of use in widening the ideas of candidates selected in India, and giving them an insight into English ways of life and thought. But he does not think that it would afford the same guarantee for the possession of something more than the common degree of enterprise and resolution as a journey and residence voluntarily undertaken and carried through on the chance of success; and the field of study after selection being of necessity narrowed to the subjects needed by way of preparation for an Indian official career would be no effective substitute for the general course of English education which now has to precede it.

20. There seems to be little reason to hope that simultaneous competition in India would secure a better class of recruits for the highest appointments open to natives than the system of combined competition, selection and promotion embodied in the Provincial Service scheme. On the other hand it would greatly restrict the power the Provincial Service scheme is designed to preserve and enlarge, of rewarding proved merit and efficiency, and it would react on the tone of lower grades of the service, which would by its adoption be more than ever cut off from the prizes of good work and legitimate ambition.

21. I am to state, in conclusion, that the Governor in Council, having carefully considered the schemes suggested in paragraph 21 of the letter under reply, has formed the opinion that none of them would be an improvement on the present arrangements, and is consequently unable to recommend any one of them for adoption. The Provincial Service scheme, as it stands, is, in the opinion of this Government, better adapted to give such effect as is possible to what must be assumed to be the objects underlying the Resolution than any modification of the Resolution itself. It seems very unlikely that the supporters of the Resolution would accept any of the schemes in question as a better substitute for their own proposal than the Provincial Service scheme; and the difficulty suggested in the concluding sentence of paragraph 23 of the letter from the Government of India, that the publication of that scheme has given ground for reasonable expectations which it would be unfair and impolitic to disappoint, is, I am to suggest, real enough to afford a strong ground not merely for delaying or modifying the introduction of the principle of open competition, but for adhering permanently to the scheme, as one to which the Government stands committed, and which really affords the best practical solution of the problem.

I have, &c.

(Signed) G. W. VIDAL,
Acting Chief Secretary to Government.

From H. J. S. COTTON, Esq., C.S.I., Chief Secretary to the Government of Bengal,
to the SECRETARY TO THE GOVERNMENT OF INDIA, Home Department. No. 3979A.

Sir,

Calcutta,
24th August 1893.

I am directed to acknowledge the receipt of your letter, No. ^{27 Pub.} 1083, dated 5th August 1893, forwarding, for an expression of the opinion of his Honour the Lieutenant-Governor, a copy of a Despatch from the Secretary of State, dated 22nd June 1893, on the subject of a Resolution passed by the House of Commons on the holding of simultaneous examinations in India and England for the Indian Civil Service.

2. In reply, I am to say that the Officiating Lieutenant-Governor approaches the consideration of this important question with a sincere disposition to accord to the natives of India as large a sphere of suitable employment as possible in the administration of the country. He is aware that, partly in consequence of religious feeling and partly of the apprehension of danger to faith and morals which young men unavoidably left much to themselves must incur in such a city as London, there exists in the higher and more influential circles of native society a strong prejudice against sending young men to England to compete for the Civil Service. And if this religious prejudice is not so strong among the professional and middle classes, there yet remains the natural disinclination of parents to send their sons to a distant country and incur the expense incidental to the journey thither and sojourn there, on the speculation of a

successful examination. These reasons, which predispose Indian gentlemen against sending their sons to England, are, indeed, not prohibitive, for young men do continue to go in increasing numbers. Still it must be admitted that those who go are not always of the upper classes of Indian society, while in the present condition of Indian life the native Hindu Civilian who returns from England is, in the interior of the country at all events, more or less outside the pale. He is indeed, so far as Sir Antony MacDonnell has observed, usually a much abler officer than his fellow-countryman who has not been educated in England; but if he preserves English habits, he cannot associate, eat with, or intermarry with, his own people. It may be that with the extension of Western knowledge and liberal ideas, the partial estrangement which now exists between the native officer educated in England and the great mass of his co-religionists, may diminish and gradually disappear; signs are not wanting that this may come to pass in course of time; but at the present time the estrangement does more or less exist, and the Officiating Lieutenant-Governor wishes to recognise it as a factor in the problem under notice. For if one of the objects of the British Government in allowing natives of India to enter the Civil Service of India be to employ agents who are fully in touch with the feelings of the people of the country, it may be urged that this object is not always satisfactorily secured by employing in that service those gentlemen only who are by the fact of their having resided in England more or less estranged from their own people. It will be apparent from these observations that Sir Antony MacDonnell wishes to ignore no argument or plea against compelling candidates to proceed to England for their examinations, and that he proceeds to consider the Resolution of the House of Commons with no preconceived ideas hostile to the admission of natives of India into the Civil Service. On the contrary, he considers the demand for simultaneous examinations now made to be for some reasons a not unnatural demand on the part of the classes who make it, although he none the less thinks it to be a demand which in the interests of all classes could not and ought not to be granted.

3. The Secretary of State, in transmitting the Resolution of the House of Commons to the Governor General in Council for opinion, has pointed out that "it is indispensable that an adequate number of the members of the Civil Service shall always be Europeans, and that no scheme would be admissible which does not fulfil that essential condition;" and it is subject to these terms that the Government of India has invited the opinion of the Offg. Lieutenant-Governor on the question of what should be the minimum proportion of Europeans who must under present conditions be employed in those offices which are in the *cadre* of the Indian Civil Service. The Offg. Lieutenant-Governor believes that no person, European or native, who is competent to express a well informed opinion without prejudice, will contest the practical and present necessity of the condition imposed by the Secretary of State. But the effect of the condition must be to render compliance with the Resolution of the House of Commons, if not impracticable, at all events a source of numberless embarrassments to the Government. The matter is not now brought under discussion for the first time. It was thoroughly considered by the Public Service Commission and Lord Dufferin's Government. One effectual suggestion made for securing that "an adequate number of the members of the Civil Service shall always be Europeans" was to fix the strength of the European element once for all. If this were done it would be easy to recruit for it in England, allowing the remaining native element to be recruited for in India. The Officiating Lieutenant-Governor is strongly opposed to this solution alike in the interests of England and of India. It would not be possible to determine what shall be the strength of the European element for all time, or even for a generation of official life. We cannot foresee what the future may bring forth; and we could only fix the European element with reference to the circumstances as they exist, as is actually now done in regulating the number of *cadre* posts to be recruited for in London, and the number to be placed on the Provincial list. But the strength commensurate with the requirements of to-day may, and probably will, be unsuitable for circumstances prevailing 20 years hence. If any inference can be drawn from the past, it is this, that the number of natives of this country employed in scheduled posts will increase, while the number of Europeans will diminish. How far the increase will grow, or the decrease prevail, it is impossible to say: it must depend on the capacity of the natives of India for administrative work, and on their loyalty to the Crown and their adherence to the British connexion. The greater and stronger these grow, the more largely will the British Government employ natives of India in high appointments. It would, in Sir Antony MacDonnell's opinion, be alike

injurious to the legitimate aspirations of the natives of the country and to the development of a liberal policy towards the educated and loyal classes of the people, to enforce any rigid limitation to their hopes, or to impose a hard-and-fast restriction on the concessions which shall be granted. Even if such a restriction were now imposed, it is obvious that it could not withstand the course of events, and that our successors in the Government would not hesitate to remove it if circumstances dictated the necessity for doing so.

4. If, then, it is impossible to fix a rigid limitation on the number of the natives of India to be employed in the Civil Service, while it is "indispensable that an adequate number of the members of the Civil Service shall always be Europeans," it follows that the proposal to introduce simultaneous examinations must be condemned. The effect of such a system of appointment would be the continuous increase in the number of native members to the exclusion of Europeans, and the removal of the practical guarantee, afforded by recruitment exclusively in England, that the European recruits shall not fall below an adequate proportion. Having regard, therefore, to the limitation imposed on the discussion by the Secretary of State, the Lieutenant-Governor considers that for the present the prudent course to pursue will be to maintain the recruitment in England as the main source of supply of Civil Servants; but to retain an ancillary and supplementary source of supply by recruitment in India. This is the principle introduced by the Statute of 1870 (33 Vict. c. 3.). The more Sir Antony MacDonnell thinks over the question (and he had to deal with it as Home Secretary very fully when the report of the Public Service Commission was received by the Government of India), the more is he satisfied of the wisdom, justice, and effectiveness of that Act if properly administered.

5. But there is another aspect of the question to which the Officiating Lieutenant-Governor desires to invite special attention. The effect of simultaneous examinations for the Civil Service of India would be to create, by recruitment in India, a privileged service, that is to say, a service which would have privileges larger than or different from those attached to the Provincial Service, although the latter service would be recruited from precisely the same classes of native society, and would have to perform precisely the same sort of official work. To the creation of such a privileged service recruited in India the Officiating Lieutenant-Governor has the very strongest objection. The only possible justification in the present and prospective conditions of Indian society for the establishment of such a privileged service so recruited would be the recruitment into its ranks of the aristocracy of birth and property as contra-distinguished from the aristocracy of education and intellect. The experiment of the Statutory Service as it was at first worked showed, however, that it was not possible to attract into the service capable scions of old and influential families, and the process of selection originally tried gave way to a system of competitive examination, in which the scions of old families for obvious reasons did not compete, and by which we have secured exactly the same class of men as without the Statutory system we had obtained for the Uncovenanted Service. The Lieutenant-Governor can have no doubt, judging from the experience already gained, that if an annual competition is held in India for admission into the Civil Service of India generally, as the advocates of a simultaneous examination desire, we shall get no better men, socially or intellectually, than we are getting and shall get for the Provincial Service, under the stricter rules for admission to that service which we are enforcing and shall, as time goes on, enforce still more rigorously.

6. But it is suggested that if a simultaneous competition be undesirable, a certain number of appointments now reserved for the Civil Service of India might be allotted for competition in India instead of in London, and that in this way some effect might be given to the Resolution of the House of Commons. To carry this proposal into effect in the way the Lieutenant-Governor supposes it to be intended, we should have to undo everything that has been done on the report of the Public Service Commission. We should have to dismember the newly created Provincial Service; and we should presumably have to throw overboard that salutary recommendation of the Public Service Commission, which restricts employment of officers recruited in India to their province of domicile. The immediate result would be the creation of a feeling of discontentment among existing Provincial officers. This feeling has existed among the ranks of what was called the Uncovenanted Civil Service ever since the Statutory system was established, and is one with which his Honour has had much sympathy,

for if the Covenanted Civil Service be the brain of the administration, the Uncovenanted Service is its right hand. The sagacity of the Public Service Commission applied the remedy by giving to the members of the Uncovenanted, or (as it is in its enlarged sphere called) the Provincial Service, the legitimate hope of attaining by merit to some of the higher posts till then reserved for the Indian Civil Service, and by this means has raised new aspirations and inspired new energy into the great body of Indian native officials who are, it must always be remembered, drawn from the same social strata as the successful candidates at simultaneous examinations for the Civil Service of India would be. There has now been infused throughout the Provincial Service, from the lowest grade to the highest, an improved tone and a higher sense of dignity and responsibility which will continue to increase as the number of listed posts, which members of the service are declared eligible to hold, increases. This is an administrative achievement for which our gratitude is due to the Public Service Commission, and the Officiating Lieutenant-Governor would deeply regret if any injudicious action were to mar its development. In the opinion of Sir Antony MacDonnell, it would be a public calamity if the improved tone in the administration were to be destroyed, as it would be, if any of the modes for admission into the service, stated in the 21st paragraph of your letter under acknowledgment, were adopted.

7. Moreover it is the fact that, under the system of recruitment for the Provincial Service now established, a certain number of scheduled appointments, hitherto restricted to members of the Indian Civil Service, are recruited for in India, and that there is in substance simultaneous examination, although the successful candidates are not classified in the same list with the candidates who are successful in the examination in London. The strength of the Bengal Imperial Service *cadre* is 179; and out of this number 20 appointments, or 11·17 per cent., have been "listed" and made over to the Provincial Service. Recruitment for vacancies in these 20 appointments takes place annually, and it is literally true to say that examination of natives of India for a certain number of scheduled posts does take place annually in India. It seems to Sir Antony MacDonnell, having regard to the extreme undesirability of establishing a specially privileged service by recruitment in India, and the great loss which would be inflicted on the Government and the people by any injury to the position, prospects, or prestige of the Provincial Service, that this is the direction in which the advocates of simultaneous examinations should press their claims. Let them in due time press for a further increase in the scheduled posts to be "listed" or transferred to the Provincial Service; let them on a suitable opportunity urge that in Bengal the 20 posts now transferred shall be increased. If the number of scheduled posts which the Public Service Commission proposed to transfer to the Provincial Service had not on the recommendation of Lord Dufferin's Government been reduced, it is more than probable that we should have heard nothing of this demand for simultaneous examinations, natural though it may be from the standpoint of those who make it. Sir Antony MacDonnell would not be understood to say that the modifications effected in the recommendations of the Public Service Commission by Lord Dufferin's Government were unsuitable. Far from it; he thought them suitable in the circumstances of the time, but circumstances change, and 20 years, or twice 20 years, is but a brief span in the lifetime of a people. If circumstances do change, and a larger transfer of scheduled appointments can in the public interests be safely made from the Imperial to the Provincial Service, then the Officiating Lieutenant-Governor has no doubt that it will in due time be effected. Only let the policy of the Statute of 1870 be enforced and we shall, by means which will grow in effectiveness, attain the end contemplated by the Resolution of the House of Commons, namely, the adequate employment of competent natives of India in a due proportion of the posts reserved for the Civil Service of India. The posts for which the Civil Service of India is recruited may be divided into two classes, viz., Imperial posts to be recruited for from England, and "listed" or Provincial posts to be recruited for in India; and all that is necessary now to do is to recognise and provide by rule that this division or the apportionment of posts to each class shall be from time to time revised, so that the claims of natives of India to higher employment may be considered at regular intervals in a formal and effective way, with reference to the circumstances of the time, to the number of natives of India who gain admission to the service through competition in England, and to the maintenance of "an adequate number of European members."

8. The advocates of simultaneous examinations do not fully define the objects they have in view. But they possibly may mean that the candidates who would succeed at

the examination held in India, should enter the Civil Service on the same conditions as to pay, leave, pensions, &c. as those recruited by examination in England. If this be their meaning, then the acceptance of simultaneous examinations, besides being open to objections indicated above, would be altogether unfair to the general taxpayer. The conditions of the Civil Service of India have been defined with reference to recruitment from England, and are intended to compensate Englishmen for service in a foreign country. It is unnecessary, and would be unfair to the people of India to extend these conditions to officers recruited in India itself, or to pay for such officers at almost double the price at which they can now be obtained in practically unlimited numbers for the Provincial Services. There is no reason why higher emoluments should be given to gentlemen recruited in their own country under the simultaneous system of examinations now pressed on us, than are found to be sufficient to attract gentlemen of the same class and qualifications who are now members of the Provincial Service holding "listed" posts.

9. His Honour has one word more to say in conclusion. All the most prominent advocates of simultaneous examinations insist on the necessity of candidates selected in India proceeding afterwards to England, there to complete their training in the social and intellectual atmosphere of English life. With this section of the Indian public religious prejudice against foreign travel obviously does not prevail, and to it the existing system is presumably obnoxious, only because it takes Indian youths to England at an early age, and this for a more or less speculative adventure. To the latter objection Sir Antony MacDonnell attaches no great importance. The Civil Service of India is so attractive that there is, even in existing circumstances, no dearth of Indian candidates, while those who are unsuccessful find in the legal and medical professions sufficient reward for the trouble and expense of going to England. To the other objection it may be effectively replied that, unless the native of India does go to England while he is still young, and his mind plastic and susceptible of lasting impressions, he will never become so imbued with the English spirit, as we desire members of the Civil Service of India to be. The Indian youth, who at the age of 16 or 17 goes to England for his education and returns a member of the Civil Service at the age of 23 or 24, is likely to be, from the English point of view, a far more accomplished and better officer than the young gentleman who, probably a married man and with formed habits, visits England for the first time at the age of 22 or 23, and returns a year or two later with a meer veneer of English manners. If, therefore simultaneous examinations with subsequent training in England were to be held at all, we should have to revert to the early age limits for candidates, that is to say, we should have in this matter also to cancel our acceptance of one of the strongest recommendations of the Public Service Commission, and revert to a method of selecting English candidates for the Civil Service of India, which experience has clearly proved to be defective. We should in effect be adjusting to the conditions of native recruitment that examination which was instituted for the purpose of recruiting British officers alone. This is in the nature of a reduction to an absurdity.

10. In the preceding paragraphs no reference has been made to the practical difficulties attaching to the holding of examinations simultaneously in India and in England, or to the inconveniences which would arise from the indiscriminate application of such a system to provinces of varying stages of educational development and with various racial characteristics. It was the Lieutenant-Governor's wish to discuss the question in its wider non-technical and impersonal aspects; but he does not deny to these difficulties a considerable measure of importance, though they do not seem to him to be in themselves of a permanent or decisive nature.

I have, &c.

(Signed) H. J. S. COTTON,
Chief Secretary to the Government of Bengal.

EXTRACT from Letter No. 2607 of 1893 from the CHIEF SECRETARY TO GOVERNMENT, N.-W. Provinces and Oudh, to the SECRETARY TO THE GOVERNMENT OF INDIA, Home Department, dated Naini Tal, 5th September 1893.

I am directed to acknowledge the receipt of your letter, No. ^{27 Public}₁₀₈₄, dated 5th August 1893, asking for an expression of the opinion of this Government on the question

of holding simultaneous examinations in India and England for the Indian Civil Service.

If the Lieutenant-Governor were to deal with the question of simultaneous examinations in the abstract, he would reply that they were possible. It is quite possible to hold a paper examination at several different centres and to arrive with some degree of accuracy at a judgment of the respective merits of the candidates. Such an examination would not be altogether fair or satisfactory. It would be impossible to have a *viva voce* examination, because the examiners could not be the same and because it would be difficult to get competent examiners in India; and this part of the examination is very often essential for discriminating between the claims of nearly equal candidates and also for purposes of distinguishing true knowledge from mere cram. Sir Charles Crosthwaite's answer to this question then is that with very careful arrangements it is possible to have simultaneous competitive examinations in England and India, but with much less accurate and satisfactory results than can be obtained by one examination.

It is of course known to the Government of India that the party in this country which is agitating for simultaneous examinations hopes to obtain thereby for natives of India a much larger share in the Civil Service of India. The real question therefore is how far we can go with safety in this direction. The Civil Service of India is a controlling and governing body: it controls a vast army of native subordinates in whose hands is the executive, magisterial, and judicial work of the country to a far greater extent than people not conversant with affairs in India imagine. Taking a district as the administrative unit, the controlling staff consists on an average of a District Magistrate with one English Assistant who in the larger districts is an officer of some experience, and in the smaller is usually learning his work. There is an English Superintendent of Police, and perhaps one English Assistant Superintendent, if the district is a large one. The native superior staff ordinarily consists of three or four Magistrates of the Provincial Service who do much of the criminal work, and five or six officers of the Subordinate Civil Service, who, each in his division of the district, have magisterial powers and judicial powers in revenue cases. Under these superior officers are all the minor officials in the Police and Revenue Department. In the judicial department the conditions are similar: the main bulk of the civil judicial work is done by Subordinate Judges and Munsifs, who are all natives. In large districts there is an English judge who has appellate and controlling powers; smaller districts have only a share in an English Judge.

It was stated by the Duke of Argyll in his Despatch of 1869, quoted in the Government of India's letter, that "it should never be forgotten, and there should never be any hesitation in laying down the principle, that it is one of our first duties towards the people of India to guard the safety of our own dominion. For this purpose we must proceed gradually, employing only such natives as we can trust and then only in such offices and in such places as in the actual condition of things the Government of India may determine to be really suited to them." It will also be admitted that we are not only bound to guard the safety of our own dominion, but to maintain to the best of our ability British order, justice, and administrative purity so long as that dominion lasts. If we want to have a pure and good administration we must have strong English control. All experience, not only in matters connected with the Government, but in all great commercial undertakings and railways, teaches us that without English supervision it is almost impossible to have thorough efficiency and honesty.

The question then is whether the English element in the service is stronger than is necessary. This is a question which cannot be answered on theoretical grounds.

*Burma.
Central Provinces,
North western Pro-
vinces and Oudh.

Sir Charles Crosthwaite's own experience is that in the three Provinces* which he has administered the English controlling staff is either insufficient or barely sufficient. It is insufficient at the time of year when most officers are on leave and at other times it is barely sufficient. In case of famine or civil commo-

tion it would be altogether inadequate. It may be said that the native officers whom we should get by the means of simultaneous examinations would be equal to Englishmen, and would from their knowledge of their countrymen succeed better in controlling their subordinates. So long as the examination is in England the natives who succeed are to a certain extent men picked not only by literary competition but by natural selection. They have had the enterprise necessary to throw off their prejudices, and for a long period to reside and study in a foreign country. The expenditure involved is security to a certain extent that they belong to families that are respectable and

well-to-do. By a lengthened period of residence in England, often in English families, they become to a certain extent Europeanised in their ideas and habits of thought. The Government of India has had some experience of men of this class. Many of them no doubt make good average officers: but no one would venture to assert that a larger admixture of them would not seriously weaken the administration. Under the simultaneous examination system the process of natural selection which has been referred to would be excluded. The men we should get might be good scholars and intellectually capable; but, so far as the Lieutenant-Governor's experience of the students of our colleges and of the classes from which they come can be trusted, the majority would be wanted in the strength of mind and force of character necessary in the *personnel* of a controlling and governing body. It is true that it is proposed to complete the education of the successful competitors by sending them to England for a period. This period could only be short, and it is very doubtful whether a short visit to England would make them better servants of the Government, while it would certainly put them out of touch with a large class of their countrymen. A short sojourn in England at the public expense and after a place in the service had been secured would not test the characters or improve the minds of the successful competitors in the same manner or to the same degree as the prolonged residence required from candidates under the present system. It is a great mistake to suppose that British India has arrived at the stage where nothing but smooth progress need be anticipated, or to think that the principles of law and order have penetrated the minds of the people so deeply that the English element in the civil Government may be safely diminished. We know little of what is below the surface, but we know enough, even without the teaching of recent events here, in Bombay and in Rangoon, to be sure that this is not a true estimate of the situation. It is instructive to observe that during the late riots in Bombay native papers like the *Hindu Patriot*, while demanding in one column a larger share of administrative appointments for their fellow-countrymen, were calling out in another column of the same issue against the Government for not having more European police officers in Bombay. What is desired by them is that the British power should hold the country while they administer it. It has not been found possible, and so far as Sir Charles Crosthwaite knows not even the party which is demanding simultaneous examinations has advocated it, to have native Superintendents of Police. The conclusion then is that the present proportion of natives in the Civil Service of India cannot be exceeded safely. Under the present rules 16 $\frac{3}{4}$ per cent. of the appointments in that service have been given to the Provincial Civil Service. It is open to natives at the same time to enter the service through competitive examination in England. This in Sir Charles's opinion is as far as we can go. In fact it may be advisable now, and may become necessary hereafter, to restrict the total number of natives admissible to the service to a proportion of 18 per cent. as recommended by Lord Ripon's Government.

If it is admitted that a limit must be placed on the number of natives in the Civil Service of India the scheme of simultaneous competitive examinations contemplated by the Resolution of Parliament becomes impracticable. It will be impossible to have a competitive examination, and to reject a number of successful candidates on account of their race. The question then arises whether any system of recruiting natives of India for the Civil Service by competition in India can be devised. There is no practical difficulty from an examiner's point of view in setting apart a certain number of appointments every year for competition in India, and the competitors so selected can, if it is thought desirable, be sent to England for training and for the completion of their education. If this method is adopted, the posts which have lately been assigned to the Provincial Service will have to be withdrawn, and that service reduced again to a subordinate position. There are in the Lieutenant-Governor's opinion great objections to this plan. In the first place it would restrict the appointments in the service to one class, a small and partially denationalised class of natives of India. The Lieutenant-Governor recognises the advantage of a lengthened residence and education in Europe for men who are to take their places beside Englishmen in the administration of India. But he does not believe that in most cases any benefit is derived by a native educated in this country from a short residence in England apart from his own family and away from the restraints which the public opinion of his fellows places on his conduct. It is not possible moreover to ignore the fact that Hindus who have crossed the sea are looked upon as foreigners by the vast majority of their countrymen, and are unable to keep Government in touch with true native feeling. In the second place for the good of the administration it is most important to improve the prospects of the Subordinate Executive Service. The measures lately

taken on the report of the Public Service Commission have opened up prospects to men in the subordinate ranks which they never had before. The important part of the Subordinate Executive Service consists of the Tahsildárs. The best Tahsildárs rise to be deputy collectors. The deputy collectors are now members of the Provincial Service, and as such are eligible for the higher posts that have been reserved for that service. It is believed that this measure will have an excellent effect, not only on the two grades above-mentioned, but on the whole of the subordinate ranks from which Tahsildárs are as a rule selected, and that the standard of the whole service will be raised. Under the present system the higher posts reserved for the Provincial Service will be filled by mature men of tried ability and experience. The system, to use the Duke of Argyll's words, is "a competitive examination of the best kind." By recruiting for the higher posts by competitive examination we shall impair the efficiency of the lower grades without getting better men for the higher. If it is desired to introduce competition in some form it should begin much lower down in the service. In order to get men of good education and respectable family, it is by no means necessary to offer them, at the commencement of their service, places in the higher ranks of the administration. The Government could fill the ranks of the Tahsildárs (who receive salaries of Rs. 150 to Rs. 250 per mensem) with educated men of a good class, and Deputy Collectorships, with salaries varying from Rs. 250 to Rs. 800 per mensem, are sought for still more eagerly. It must be remembered that the necessary expenditure of a native gentleman in his own country is very much less than that of an European gentleman in India. It is unnecessary to prove this by entering into details. If it is desired to introduce competition, it should begin with the lower ranks either of the Provincial Service as at present constituted; or, as Sir Charles Crosthwaite would prefer, at a still lower stage of the official ladder. There is, however, one great, and so far as his Honour can see for the present insuperable, objection to the introduction of a purely competitive system in these Provinces. A large proportion of the population, and perhaps a still larger proportion of the upper and influential classes, belongs to the Muhammadan creed. The Muhammadans are for many reasons behind the Hindus in education. The distance between the two classes is lessening but very slowly, and it will be many years before it disappears. Although inferior in literary education, especially in English, the Muhammadan as a rule is a stronger and more reliable man for administrative purposes than the Hindu. To exclude him from the service of Government—and it is certain that a system of recruitment by pure competition will exclude him—would be a great loss to the strength of the administration. It would, moreover, be a great injustice and a huge political mistake. The Muhammadans are well aware of the effect which a system of competitive examinations for entry into the public service would have on their prospects. They are already sore enough on account of the practical exclusion of their influence from Municipal and District Boards and from seats in the Legislative Councils, which is the result of the elective and *quasi*-elective systems lately introduced. To pass a measure which would almost totally exclude them from the higher ranks of the Government service would fill them with dismay and discontent. Sir Charles Crosthwaite is therefore strongly of opinion that no competitive system, pure and simple, can be introduced into these Provinces at present without causing great injury to a very large, influential, and loyal class of Her Majesty's subjects. At whatever stage recruitment by competition is introduced, it will be necessary to reserve a certain number of places for Muhammadans until they approach the Hindus in the standard of their education. If this is done the Lieutenant-Governor has no objection to recruit the Subordinate Executive Service by competition beginning at a grade below that of Tahsildár. The Provincial Service, which commences with the grade of Deputy Collector, is at present recruited two-thirds by promotion from the lower ranks, and one-third by selection from graduates who are nominated by the Principals of the various colleges in the Provinces. When the number of Muhammadan graduates increases the appointments filled by the latter process may be thrown open to competition. It will be always expedient to retain some places in the hands of Government for the sons of men who have done us honourable and faithful service, much as the Government reserves a certain number of cadetships in the army for the sons of Indian officers.

To sum up, the Lieutenant-Governor's conclusions are these:—

- (1.) That it is possible to hold simultaneous examinations in England and in India, but that the result of such examinations will not be so satisfactory as under the present system. Because a *vivâ voce* examination will be impossible, and because the test of strength of mind and enlightenment involved in the journey to England and prolonged residence there will be wanting.

- (2.) The proportion of natives to Europeans in the Civil Service of India cannot be increased without risk to the safety of our dominion and the efficiency of the administration.
- (3.) Recruitment for the Civil Service of India by means of simultaneous competitive examinations is therefore inexpedient.
- (4.) It is possible to fill the posts in the Civil Service of India reserved for natives of India by competitive examinations in India. But that system is inferior to the present method of recruitment, inasmuch as it will injure the present Provincial and Subordinate Service without giving us better men; and it is unjust, administratively bad, and politically dangerous, because it will exclude Muhammadans from the service.
- (5.) That if some posts are kept at the disposal of the Government the Subordinate Executive Service may be recruited by competition at the bottom, officers so recruited having a prospect of rising to a very high level of superior and responsible duties.
- (6.) After a time, as the standard of education rises, some direct appointments to the Provincial Service may be filled by competition among graduates.

From H. C. FANSHAWE, Esquire, Officiating Chief Secretary to Government, Punjab and its Dependencies, to the SECRETARY TO THE GOVERNMENT OF INDIA, Home Department. No. 930 S.

Sir,

Simla,
28th September 1893.

I am directed to acknowledge the receipt of your letter, No. 27—1085, of 5th August last, and in reply to forward a note recorded by the Honourable the Lieutenant-Governor of the Punjab upon the proposal to hold simultaneous examinations in India and England for the Indian Civil Service.

2. Sir Dennis Fitzpatrick desires me to add that in looking over his note it strikes him that owing to his having had in view while he wrote it not only the Punjab, but also the various other parts of India in which he has served, he has not dwelt so much as he might have done on the peculiar circumstances of this Province. His Honour therefore thinks it well, with a view to supplying this defect, to forward herewith a copy of paragraphs 17 and 18 of the letter of this Government to the Government of India, No. 146, of 25th June 1888, which was written in the time of his predecessor, Sir James Lyall, whose intimate knowledge of the Province and its people may, Sir Dennis Fitzpatrick thinks, be said to surpass that of any other person now living.

I have, &c.

(Signed) H. C. FANSHAWE,
Officiating Chief Secretary to Government, Punjab.

EXTRACT from Note dated 23rd September 1893 by Sir DENNIS FITZPATRICK, Lieutenant-Governor of the Punjab, on the proposal for an examination in India for admission to the Civil Service.

In order to understand our present position with regard to this question it is necessary at starting to look back to its past history.

That history, so far as records are available here, begins with section 87 of the 3 & 4 Wm. IV. c. 85., which runs as follows:—

“And be it enacted that no native of the said territories nor any natural born subject of His Majesty resident therein shall by reason only of his religion, place of birth, descent, colour, or any of them be disabled from holding any place, office, or employment under the said company.”

The importance of this section arises chiefly from its being the first intimation we have of the policy of Parliament regarding the claims of natives of India, and of what used to be called European “adventurers” or “interlopers,” to employment in the public service, but, as a matter of fact, it did no more than remove any legal disabilities that might formerly have stood in the way of the appointment of such persons; nor was it intended by those who framed it to do more. When Lord Ellenborough in the

debate of the 5th of July 1833 charged the Government with proposing "to place the political and military powers in India in the hands of the natives," the Marquess of Lansdowne, who had the conduct of the matter in the House of Lords, replied "What I said was that all offices in India should be *by law open* to the natives of that country," and as a matter of fact Parliament at that time was so far from contemplating the admission of Indians to any considerable number of the higher offices in India that it, by other provisions of the same Act, placed admission to the Covenanted Civil Service on such a footing that, though that service was, as Lord Lansdowne put it, "by law open" to Indians, it was practically certain that, except under some most extraordinary circumstances, not one of them could have the smallest chance of entering it.

The Queen's proclamation issued after the mutiny, to which I shall next refer, though I am not sure that in so doing I am not slightly inverting the order of time, went considerably further than the section of the Act of William IV. to which I have just referred. The Act of William IV., as observed by Mr. J. M. Ludlow,* an enthusiastic advocate of the claims of the Indian people, "was only negative, a mere removal of disqualification," whereas Her Majesty's proclamation is "positive pledging admission to office." The clause of the proclamation to which I refer ran as follows:—

"And it is our further will that *so far as may be* our subjects of whatever race or creed be freely and impartially admitted to offices in our service the duties of which they may be qualified by their education, ability, and integrity duly to discharge."

I have italicised the words "*so far as may be*" because the qualification involved in them should not be lost sight of. The writer whom I have already quoted and whose eloquent work is a running commentary on the proclamation, observes regarding these words as follows:—

"Not, indeed, that the qualification must be forgotten, '*so far as may be*.'"

"No doubt these words may be so interpreted by prejudice and ill-will as to nullify the whole promise.

"No doubt that the tendency to play the Jesuit with them, radiating from many a narrow heart and brain in the Indian Council at home, will for many a long year paralyze the hands of officials in India when the native knocks at the door of office.

"But by nothing can this tendency be more confirmed, more sharpened into bitter hostility to native claims, than if the qualification and its necessity were overlooked, and the native population were to fancy that the very walls of office are to fall before them at the sound of the proclamation, like those of Jericho at the sound of Israel's trumpets. The qualification is a *necessary* one at present.

"On the morrow of a rebellion fomented by Brahmins and Mussalmans, which has convulsed all India, England cannot, for India's own sake, treat Brahmins and Mussalmans without caution at least, if not without suspicion."

Now, if these were all the texts we had to expound and follow, though of course there would have been always much room for discussion as to whether we were giving the people of India a due share of the higher offices, the very sharply defined and, I may say plainly at once, the very perplexing issue, which we have now before us, would not have been raised.

What has raised that issue is the parliamentary enactment (21 & 22 Vict. c. 106. s. 32) requiring that all posts in the Civil Service shall be disposed of in accordance with the result of a competitive examination in certain "branches of knowledge" open to all persons "being natural born subjects of Her Majesty." This method of disposing of the patronage was adopted because it was considered that it was likely to give us men better qualified to discharge the duties of an Indian Civil Servant than we could hope to get in any other way, but the natural consequence of adopting such a method is that the appointments have come to be regarded by the small fractions of the population in England and in India, that have a chance of successfully competing for them, chiefly in the light of prizes offered as rewards for merit of a certain sort, and in the competition for which all persons having merit of that sort are entitled to be placed on an equal footing down to the smallest details.

Now, it is of course impossible in such a case to put all "natural born subjects of Her Majesty" on a precisely equal footing. The competitive examination is held in London, as it was intended by the authors of the Act and, as may be gathered from the way the Civil Service Commissioners are introduced into the arrangement, the Act itself contemplated it should be, and this necessarily gives residents of the United

* Ludlow's Thoughts on the Policy of the Crown towards India, 1859.

Kingdom an advantage over residents of Her Majesty's dominions abroad. It is the same in the case of the army examinations, and it would obviously be impossible to establish "simultaneous examinations" in either case all over the world. All we can reasonably be expected to do is to set up our testing apparatus in a central position. We cannot go carrying it about to the door of every person who desires to compete. This no doubt would be the answer we would give to an application for a "simultaneous examination" coming, *e.g.*, from one of the Australian Colonies. At the same time it must be admitted that the claim of Indian candidates to a "simultaneous examination" stands in certain respects on a peculiar footing, first because the prizes to be competed for have a value for them beyond all comparison greater than they have for any other class of Her Majesty's subjects, secondly because they would, if it were made equally easy for them, compete for those prizes in much larger numbers than any other class of Her Majesty's subjects, and thirdly because many of them, owing to the peculiarities of their religious observances, have much greater difficulties about coming to London than any other class of Her Majesty's subjects.

For these reasons it has been felt for many years past that the class of Indians who would have a chance of succeeding at the competitive examination are deserving of special consideration in regard to this matter; but it was decided by Parliament, after very full deliberation, that it would be best to afford them relief, not by holding a simultaneous competitive examination in India, but by taking away from the Civil Service a certain proportion of the posts set apart for that service and conferring those posts on "natives of India of proved merit and ability" under such regulations as might from time to time be framed by the Government (33 Vict. c. 3. s. 6). Unfortunately that system had not a fair trial. In the Punjab it was not worked altogether as it ought to have been worked, but I am well satisfied with the officers it has given us. Elsewhere it was not worked so well, and I believe fell into discredit. Moreover, the educated Indians of humbler position and whose families had no special claims on the gratitude of the British Government on the ground of service or otherwise, and who had thus less chance of getting their sons in under it protested against it.

Then came the Public Service Commission of 1886-87. That was a very strong Commission consisting of six European, two Eurasian, and six eminently representative Indian members with, as President, Sir Charles Aitchison, who perhaps commanded the respect and confidence of advanced Indians to a greater extent than any other European official of our time. One of the main proposals submitted to that Commission for consideration was the very one now under discussion, *viz.*, that for a simultaneous competitive examination in India for the Civil Service, and after the fullest deliberation, they unanimously rejected it, recommending instead, as the best method of satisfying the aspirations of Indians who might have claims to posts of the higher class, that the Uncovenanted Service should be re-cast and erected into a separate service to be called the Provincial Service, and that to that service a certain proportion of the higher posts previously reserved for the Covenanted Service should be assigned. Their recommendation was accepted with some not very important modifications by the Government, and has now to a considerable extent been given effect to.

But now, when the ink is scarcely dry on the subsidiary orders issued to give effect to it, we learn that some of the educated Indians are not satisfied with it, and that a resolution has been passed by the House of Commons re-opening the whole question.

The objections, as I gather, to the settlement effected by the Public Service Commission are—

1st. That it will not give to Indians as large a proportion of the higher posts as they might hope, at least after a time, to get if the simultaneous examination were established.

2ndly. That the Provincial Service is a service standing on a lower footing than the Covenanted Service, and that attaining one of the higher posts in it will be a different thing from attaining a similar post in the latter service, and

3rdly. That admission to the Provincial Service would not be obtainable in all cases by competition pure and simple; that in regard to some portion of the appointments to it good birth, the loyalty and services of the applicant's family and other such considerations would be taken into account; and that then, after a young man had got in, his prospect of attaining the higher posts transferred from the Covenanted Service would depend on a further competition not in certain "branches of knowledge," but in practical work.

Now, looking upon the whole question of appointment to the higher posts, referred to simply as one of the distribution of a given quantity of loaves and fishes, and seeing that the distribution is in the case of English candidates made dependent entirely on the result of a competitive examination, I think we must admit that the objections just mentioned are very fair objections for a class of persons, the members of which are most likely to succeed in a competitive examination, to put forward.

But, on the other hand, there are very serious difficulties in the way of our acceding to the demand for a "simultaneous examination."

In the first place, if this demand was to be entertained at all, it ought to have been taken up by the House of Commons before we gave effect to the recommendations of the Public Service Commission. In accordance with those recommendations we have now pledged ourselves to give one-sixth of the higher appointments formerly open to competition to the Provincial Service, which will in future consist almost entirely of Indians. We have done this in order to compensate Indians for the very disadvantage now complained of, and it could hardly be contended that if we were to remove that disadvantage they would be entitled to retain the compensation given them by way of relief against it. It can hardly be contended that we should keep two doors fully open for them and only one for the Europeans. Hence if we were to establish the simultaneous examination in India, we should have to take back from the Provincial Services the advantages we have already pledged ourselves to give them. This is a difficulty of which I shall have to speak at greater length presently, but for the moment I will assume that it can be got over.

Now we come to the main difficulty. The young men of this country, or at least certain classes of them, display an aptitude, which is as creditable to them as it is remarkable, for acquiring knowledge from books and reproducing it at examinations, and it is beyond a doubt that if the simultaneous examination were established in this country and the English and Indian candidates were placed in one list, as proposed, the great majority of the places would before long fall to the Indians. Further, once the number had increased to any considerable extent, it would begin to increase at an ever-accelerating rate, for we must take men as we find them, and we may be quite sure that, wisely or foolishly, the better class of English candidates would hold back from competing for a service which would consist very largely of Indians.

This, it will no doubt be said, would be all as it should be. If you give Englishmen and Indians an equal chance, and the Indians get the best of it, why shouldn't they? and if Englishmen from prejudice or otherwise do not care to belong to a service composed mainly of Indians, let them keep out of it.

Now, there is no doubt that looking at the question still in the way I have up to this been doing, namely, as a question simply of the fair distribution of a given quantity of loaves and fishes, this argument is perfectly sound and unanswerable. But I need hardly say that it is impossible to treat the question simply as one of the distribution of loaves and fishes. Looked at from that point of view, its importance is, comparatively speaking, extremely trifling. There are perhaps at any given moment in England a couple of hundred fathers* of promising sons who have some hope of getting those sons into the Civil Service under the present system, and there are the couple of hundred promising sons who have some hope of getting in. On the other hand, there are perhaps a couple of hundred Indian fathers who would have some hope of getting their sons in if things were as they would be some years after the simultaneous examination was established, and there are their couple of hundred sons looking in the same direction. These fathers and sons, English and Indian both alike, form classes worthy of respect and deserving of all possible consideration, but who would dare for a moment to suggest that the claims of these infinitesimally small fractions of the population should be allowed the weight of a feather if they should be found to come in conflict with the best interests of the hundreds of millions of people for whose government we have made ourselves responsible in this country?

Looking towards the remote future, it is possible to conceive a time when the mass of conflicting elements which at present constitute the population of India would be somewhat fused together and when the education of the people would have progressed so

* I may mention here that the opposition of English officials in this country to the influx of large numbers of Indians into the Civil Service is sometimes ascribed to a selfish desire to keep the appointments for their own class, but as a matter of fact the son of an Anglo-Indian official has, owing to his being deprived of parental supervision, less chance of becoming fitted for a severe competitive examination than the son of any other Englishman of a similar rank of life, and very few of our sons ever get in. In fact we are in this respect somewhat in the same predicament with our Indian fellow subjects.

far that Indians would be found to have all the qualifications of Englishmen for governing the country, and other important qualifications in addition. If such a time were to come, it would be natural to propose that admission to the Civil Service should be restricted altogether or nearly altogether to Indians, and if such a proposal were made on the ground that it was best for the country at large, what, I would ask, would be thought of any one who opposed it on the ground that it would exclude an insignificant handful of people in England from a share of the loaves and fishes?

And if the converse is the case at this moment, if it is clear that the good of the mass of the people of India at this moment can be secured only by having the great bulk of the higher appointments filled by Englishmen, who, I would ask, would dare to suggest that to secure to an infinitesimally small fraction of the population an adequate share of the loaves and fishes we should adopt a system which would give the bulk of the higher appointments to Indians?

This brings me to the main point of my argument, which is that it will for a long time to come be impossible, having regard to the interests of the masses of the people of this country, to fill any large share of the higher appointments by Indians. That some proportion of these appointments must for a long time to come be filled by Europeans has never, as far as I know, been doubted by any authority that has considered the question, and I observe that in the Despatch of the Secretary of State now under consideration it is laid down that "it is indispensable that an adequate number" of the members of the Civil Service shall always be Europeans, and that no scheme "would be admissible which does not fulfil that essential condition."

I may add that in the leading organ of the advanced Indians published in this Province that condition is accepted as a matter of course.

This question is thus reduced to one of degree—of more or less; but even when reduced to this, it is a difficult one to deal with, and one which it is impossible to discuss without, on the one hand, making some admissions which are unpalatable to British pride, and, on the other hand, saying some things which may offend the susceptibilities of Indians. This is much to be regretted, but the occasion is one for plain speaking.

In his Despatch, No. 3, of the 8th April 1869 the Secretary of State, speaking of the possibility of employing Indians in the higher offices, wrote: "It should never be forgotten and there should never be any hesitation in laying down the principle that it is one of our first duties towards the people of India to guard the safety of our own dominion." That is, I need not say, true, but it seems to me to be a somewhat inadequate statement of the position. There are, of course, certain moral obligations which are so obvious and so stringent that no question can ever arise regarding them and which in everything we do in this world must have the first place, but next after them comes the obligation to maintain British rule, inasmuch as it is the condition precedent to the performance of all the other duties we owe to India. It is no doubt possible by an effort of the imagination to conceive a time when India would be able to stand alone, and when it would be our duty to withdraw and allow it to do so; but about such matters it is unnecessary to speculate at this moment. It is enough to say that as things now stand, and as they will stand for any time worth taking into consideration, our first and paramount duty is to maintain British rule in India with a strong hand.

British rule brought this country out of a state of chaos the horrors of which it would be difficult for a stay-at-home resident of Europe in the 19th century adequately to realise, and if the grasp of the British power were relaxed even for a brief period over any part of the country, chaos with all its horrors would come again.

Englishmen, even Englishmen who spend their lives in India, are not given to reflecting much on this: and I doubt whether many natives of the country nowadays think of it, though it was a good deal present to the minds of the people of the Punjab when I first came to India.

The fact is that we have now had 35 years of internal peace unbroken except by petty local disturbances, and we have begun to flatter ourselves into the belief that our position in this country is absolutely unassailable; but as a matter of fact it is not so. It is, and always will be, liable to disastrous shocks from which it might take a long time to recover; and though this is not a pleasant subject of reflection to us with our national vanity and our tendency to optimism, the more completely we realise it the better.

It must not be supposed when I say this that I am writing merely under the influence of an alarm raised by the events of the last few weeks.

I am not saying it for the first time.

In a note which I recorded more than six years ago I find I wrote as follows :—

"It may be thought that with the advance of civilisation there would be an improvement in this respect, and, after some generations that will doubtless prove to be the case; but there is no sign of it yet: indeed there has been something like an exacerbation of hostile feeling between certain rival sects of late years which I find many intelligent natives attribute to the development of the press, the post, and the telegraph. A quarrel between Hindus and Mussalmans at Salem or Delhi, which formerly would have been a purely local affair, is now within a few hours the subject of discussion all over the country, and thus the evil multiplies itself."

The disturbances which have just occurred in the Benares Division, in certain parts of Behar, in Rangoon and Bombay, and the excitement which has followed throughout the whole country, illustrate to some extent the danger to which I referred on that occasion, but when I spoke of that danger being aggravated by the press, I confess I was far from anticipating the extent to which it might become aggravated by the operations of the new fashioned agitating classes, both Hindu and Mussalman, not only through their newspapers, but also by their organised associations and public meetings.

There is another point to be borne in mind in considering our power of maintaining a hold on the country, and that is that there are all over India certain predatory or turbulent classes which, though they bear our Government no ill-will, would be always ready to break out and loot their neighbours in any part where our administration might be temporarily disorganised or our control relaxed. This occurred in many parts of the country during the Mutiny of 1857, and it would be sure to occur again. The classes to which I refer embrace not merely castes which are robbers or thieves by profession, but also large bodies of zemindars, some of them men of position and influence, now quietly cultivating their lands, and only occasionally figuring in our criminal returns, but who at heart retain their old turbulent and predatory instincts, and would at once begin to indulge them in a wholesale manner if an opportunity for doing so presented itself. Bands of four or five would soon swell to bands of 20 or 30, bands of 20 or 30 would soon swell to bands of several hundreds, towns would be looted, old quarrels would be fought out on a large scale, and a reign of terror would prevail.

No doubt we should ultimately succeed in re-establishing our authority, but one shrinks from the contemplation of the terrible aggregate of human misery which would be entailed by the outbreak itself and by its repression.

Passing on now to consider our position in ordinary times and putting all such dangers as those to which I have been referring out of the question, we find that the administration of an Indian district is beset with many difficulties of which people in England have but little idea.

There are, to begin with, the endless divisions and disputes between different classes of the people. I have already referred at length to the great quarrel between Hindus and Mussalmans, but apart from that there are other minor quarrels constantly recurring between them about processions, temples, mosques, and the use of wells, or arising from acrimonious controversial publications and speeches and so forth. Then there are the disputes of the Mussalmans among themselves—disputes between Sunnis and Shias and between old-fashioned Mussalmans, Wahabis, and "Naturies"; and the disputes of the Hindus among themselves—disputes between members of the Arya Samaj and the Sanatan Dharm party, disputes between Anglicised Hindus and old-fashioned Hindus, disputes between Vaishnavas and Saraogis, and so on.

Some of these are apt to give rise to riots—ordinary riots which can be dealt with by the police, but which require an officer of coolness, impartiality, and determination to deal with them. Others do not proceed so far as that, but nevertheless require delicate handling. People in England in the present day can form no idea of the bitterness of these disputes.

From what has been said above it will have been seen that the immediate effect of the general progress of the country is, contrary to what might have been expected, not to diminish the bitterness of these disputes but to increase it. I have explained to a certain extent how this comes about, but there is one other feature in the progress of Indian society to which I ought to refer as to some extent accounting for it. I mean the sense of liberty, equality, and individual right which a regular administration of justice and the development of political ideas has introduced. A few days ago I asked a Sikh gentleman holding a high position in an important native State what was the cause of the present disturbances, and he answered that it was the "azádi," the liberty, or perhaps, as he used the word in a dyslogistic sense, I should translate it "license," which we allow to our people. Long ago "dastúr" or "riwáj" (custom) and the views of the more steady and sensible members of a class generally prevailed. There were

of course many exceptions, but I speak of the general tendency. If the members of a sect had been in the habit of doing a certain thing in a particular place the general feeling among other sects was that they should be allowed to continue doing it there; on the other hand, if the members of a sect had not been in the habit of doing a certain thing in a particular place, they would probably not think of doing it there; and in either case individuals would not usually venture to set themselves up against the opinion of the mass. This was the way of the people, and it seemed to the Government so good a way that when I first came to the Punjab there was actually a clause in the short Penal Code, compiled for our use by, I think, Sir Robert Montgomery and Sir Richard Temple, providing a punishment for what was somewhat quaintly termed "wrongful innovation," which was understood to mean doing something that had not been done before and which would be likely to lead to a quarrel. Now we have changed all that. People are perpetually asking themselves why should not we do this and why should our neighbours be allowed to do that, and they always find the pettyfogging legal practitioner and professional agitator ready at their elbow to help them to think out the question, and some party newspaper available for discussing it.

I have had one single Mussalman after me for months, who quotes constitutional principles to me, and wants to know why I will not upset an order of the District Magistrate refusing him leave to kill cows in a place where no one else wants them to be killed; and we have recently been in danger of having a renewal of the riots at Rohtak owing to the handful of butchers there striking out a line of their own, declining to accept a settlement effected by the Deputy Commissioner between the other Mussalmans and the Hindus, and refusing to do their part in the Id-ul-zuha sacrifices, with the result that last year there were no sacrifices at all, and the decent Mussalmans suffered for their loyalty and desire to avoid a breach of the peace.*

I ought to add, before passing from this subject of sectarian quarrels, that within the last two or three weeks several of the native newspapers have begun to counsel reconciliation between the Hindus and Mussalmans. Whether the more advanced Hindus will succeed, as some of them profess to be able to do, in acting as mediators between their more backward co-religionists and the Mussalmans is another question. Anyone can succeed in stimulating a quarrel of this sort, but to allay it is a different thing, and a thing that if it is to be done at all could scarcely be done by gentlemen of that class. It would have to be done by the natural leaders of the people. If, however, it should be proved by some years' experience that the more educated classes are really willing and able to control the masses and reconcile their differences, that would undoubtedly necessitate a modification of some of the opinions I have expressed or am about to express in this note.

So much for sectarian quarrels.

Besides these quarrels we have standing quarrels of many other sorts to deal with—quarrels between large jagirdars and the landholders of their jagirs; quarrels on a large scale between landlords and tenants; quarrels of the Montague and Capulet order between leading men and their respective retainers, a very prominent feature in Bengal and Assam; quarrels about irrigation, and of late years, where local self-government has become anything of a reality, quarrels about it.†

Then there is the constant oppression of the weak man by the strong man, who needs some stronger man to bring him to his bearings, and the *chantage* and intimidation practised upon timid persons and among others on some of our native officials by the scurrilous native papers, the professional informers, and the writers of the anonymous petitions which reach us daily only to be destroyed, but which are still sent us in the hope that some spark of suspicion may be kindled in our minds.

No doubt there are rough and ready methods of meeting these difficulties—methods which are employed in native States, which used to be employed by some of

* This year, the butchers have given in, the Deputy Commissioner's settlement has had full effect given to it, and all has gone well.

† It may seem to persons unacquainted with India that some of the quarrels here referred to, as, e.g., quarrels between landlords and tenants and quarrels about irrigation, are simply matters to be dealt with by the courts of justice in the ordinary routine way, but when such quarrels affect considerable tracts of country or large numbers of people, we often consider that to prevent disturbances or interminable and costly litigation, it is the duty of our officers to interfere in their administrative capacity, and endeavour to effect a settlement, and this is what the people themselves expect us to do. I have this very day had before me a case of this sort between the large Ghakkar landlords of the Hazara District and their tenants which came up when I was in camp in that country some months ago, and which I now hope the Deputy Commissioner will be able to settle by the weight of his personal influence.

our older officers in British India, and which some of our Indian subordinates would still employ here if they were not closely looked after; but we nowadays are bound to employ only English methods, and methods minutely prescribed by our law, and to deal with such a state of things by those methods is very far indeed from being an easy task.

So much for the country we have to administer, and the difficulties connected with its administration.

As regards the agency available for its administration, the great bulk of the work is done by the vast body of subordinate officers, almost altogether Indian, receiving salaries which range in some cases as high as Rs. 1,000 per month. These officers have greatly improved of late years, and many of them are men of ability and eminently worthy of confidence. but the bulk of them require a vigilant eye to supervise them, and a strong hand to control them and keep them up to their work.

For supervision and control as well as for the performance of the more important portions of the actual work we have to look chiefly to the Covenanted Civil Service. To the members of that service, and in particular to such of them as hold the office of Magistrate and Collector, or Deputy Commissioner, which is the backbone of our local administration, we are compelled by the exigencies of the position to entrust powers far exceeding in extent and variety any powers that would be concentrated in the hands of a single official under any Government in Europe. I may be permitted in this connection to quote the remarks made by Lord Macaulay in the debate in the House of Commons of the 24th of June 1853, on the position of the members of the Civil Service generally, and of the District Officer or Collector in particular. Of the Civil Service generally, he said:—

“There is not a single one of these men upon whose capacity the happiness of a very large number of human beings may not in any situation depend. It is utterly impossible that one-tenth part or one-twentieth part of that service can consist of incapable men without causing great suffering to thousands of individuals.”

Of the Collector or District Officer, he spoke as follows:—

“Some gentlemen seem to imagine, putting the Indian Collector at the very highest, that he is something like a Commissioner of Taxes or Stamps in this country; while the truth is that the Collector of Revenue in many parts of India is the sole consul of a great Province, the district assigned to him being about the size of one of the four provinces of Ireland, of Leinster, or of Munster, and the population therein probably about 1,000,000 of human beings. In all that district there is not a single village—there is not a single hut—in which the difference between a good and a bad Collector may not make the difference between happiness and misery. The difference between a good and a bad Collector to the people in such a district is infinitely greater than the difference between the very best and the very worst Government that we have ever seen or are likely ever to see in England can be to the people here.”

Further on he said:—

“Such a power as that which collectors in India have over the people in India is not found in any other part of the world possessed by any class of functionaries; and I can conceive that if we made the very best arrangements possible with respect to the Home Government, we should be rendering far smaller service to those millions for whom we are bound in the first place to take thought than if we raised the capacity for the Civil Service.”

From all this, it will be seen how very high a stamp of man we require for the Covenanted Service. We require a strong man; a man of high courage, both physical and moral; a man of resource, capable of quickly grasping a complicated position and taking the responsibility of acting on his own view of it; a man thoroughly imbued with the spirit of our system and incapable of resorting to un-English methods; and last, not least, a man of perfect impartiality, absolutely unconnected with any sect or faction, and above even a suspicion of a leaning towards either side of a pending controversy.

Now, the question is whether this aggregate of qualities is to be found in Indians to the same extent as it is to be found in Europeans. I am not without hope that it may some day be found possible to answer that question in the affirmative, but truth compels me to say that it is impossible to do so at present. I am anxious to say the best I can for people among whom I have spent the best part of my life, with whom I have always lived on the most friendly terms, and to whom in many

ways I owe much; but it is impossible for me to say that for the purpose now in question, Indians are equal to Europeans. There are of course a few individual exceptions here and there, but these do not affect the question, which is one between classes taken in the aggregate. Further, there are very wide differences indeed between the various races that make up the immense population of India, much wider differences than are to be found between the nations of Europe, but all those races are essentially Oriental, and Orientals differ from the people of the West, almost as much as the inhabitants of one sphere would differ from those of another.

Observe, I do not say that Europeans, taking them all in all, are superior to Indians, taking them all in all. In some things we are superior to them; in others they are superior to us: and it would be a vain and profitless task to set about determining which is on the whole superior to the other. All I mean to say is that we are of widely different types.

This is a thing which a European coming to India takes a long time to understand properly. On first arrival, if he is a man of generous disposition he feels indignant at the manner in which he finds the people of the country spoken of by some Europeans of longer standing in the country than himself. After a little, when he himself comes in close contact with the people, he is so shocked by much of what he sees that he undergoes a revulsion of feeling, and if you meet him at that stage you will probably find that he displays the very prejudices that so shocked him on his arrival. Meet him again a few years later on and you will find that he has come at last to understand the actual position, to see that he is dealing with people of a wholly different type from himself, who are better than him in some ways, worse than him in other ways, and who cannot be judged by the same standards.

When I speak of Indians or of Orientals generally being of a different moral type from ourselves, I must not be understood as suggesting that they commonly differ from us diametrically on questions of morality; that happens only in the rare cases where some element of religion or superstition comes into play. The difference between them and us to which I refer is commonly one only of degree, that is to say, that social opinion among them insists on certain virtues and condemns the corresponding vices less strongly than social opinion among us, and that similarly social opinion among us insists on certain virtues and condemns the corresponding vices less strongly than social opinion among them; and to apply this to the particular matter before us, what I mean to say is, that social opinion among the people of this country, and even among the better class of them, insists very much less strongly than social opinion among us on those particular qualities that are needed in a man occupying the positions assigned to the Covenanted Civil Service in India.

It may be urged that education would alter that in the individual; and so it would undoubtedly to some small extent. The training of a man's intellect does to a certain extent modify his moral nature, and the acquisition of certain sorts of knowledge does the same, though to a less extent; but to suppose that merely by educating an individual in one of our schools or colleges you would produce any deep change in his moral nature seems to me a vain delusion. A man's moral nature is the resultant of the various influences of the society to which he belongs, and while he belongs to that society he can no more emancipate himself from those influences than he could emancipate himself from the force of gravity, or the pressure of the atmosphere, or the other physical conditions of life in this world. No doubt, if an Indian could be sent to Europe as a mere boy and live there for many years, his whole nature would be profoundly changed, but I cannot think that anything short of that would have such an effect.

I desire to repeat before passing from this point that I do not in saying all this mean to assert that Indians are, taking them all in all, worse than Englishmen, but merely that they are still widely different from Englishmen and much less fitted to govern the country as we are bound to govern it. I desire further to repeat that I am not without hope that the day will come when the Indians will be found equal to Englishmen in this particular respect.

It must be remembered that it is not so very long since men holding important offices and standing high in public estimation in England were often lamentably deficient in some of those qualities which we nowadays consider of the first importance in a public servant. The progress of society has altered that in England, and there is no reason why it should not do the same in India; but such changes are slow especially in Eastern countries.

I now pass to another point which it seems to me has a very important bearing on the question before us, and that is, that supposing all other differences between



Englishmen and Indians out of the question, there is this important difference between their positions in this country, that an Englishman stands absolutely clear of all the sects and factions and quarrels to which I have referred as forming so prominent a feature of Indian life and presenting such formidable difficulties to our administration, while an Indian, unless he has become altogether denationalized, has the greatest difficulty in shaking himself clear of them. The position of isolation occupied by the Englishman, whatever its disadvantages may be in other respects, gives him an important advantage in this respect, and until the ridiculous charge to which I have already referred was made the other day by a certain class of writers in the press, I never heard it suggested that the attitude of Englishmen towards the different sects and factions was other than one of the most complete impartiality.

On the other hand, a considerable proportion of the immense mass of petitions which is constantly reaching the Government, and its higher officers is full of charges or insinuations of partiality against native officers. There are, it is urged, too many Hindu officials in this district, too many Muhammadan officials in that; the Hindus are being ruined by the oppression of a certain Mussalman official, or the Mussalmans are being ruined by the oppressions of a certain Hindu official; so and so is an ardent Arya Samaj man and no one who does not join the Arya Samaj has a chance with him; so and so being a Mussalman has interfered with a certain Hindu sacred place; so and so is filling all subordinate offices with members of his own clique; and so on. Now, it is only just to say that I believe that the more serious of these charges when made against our higher native officials are very much oftener false than true, but at the same time I believe that the strength of prejudice among the people is such that many of these imputations, even when absolutely false, are made with a thorough belief in their truth, and this in itself is a serious matter from an administrative point of view. Further, I believe that many excellent Hindu and Mussalman officials, though they would not consciously favour members of their own sect, or would not take an active part with that sect in its disputes with a hostile sect, would shrink from taking an active part against their own sect in cases where their duty might require them to do so.

I need hardly add that in the case of a religious dispute a Hindu or Mussalman officer, however anxious he may be to do what is right, is at a most serious disadvantage compared with a European. A Mussalman officer set forth the other day to settle a cow dispute in a certain tract of country in the Delhi Division. He endeavoured to settle it by getting his co-religionists to yield on the subject of cows in consideration of the Hindus making certain concessions on the subject of pigs. I see no reason for thinking that he acted otherwise than with the best intentions; but just as he thought he had settled everything the Hindus began to suspect him, and the end of it was that not only did he not settle the cow dispute, but he raised a pig dispute on the top of it with the result that the village menials* throughout the tract struck work, leaving the Hindu women to do all the dirty work of their houses, and the last state of the case became worse than the first.

Another point to be remembered is that an official who is a native of the country is naturally apt to become involved in friendships and enmities among the residents of his district, and this is very likely to interfere with the proper discharge of the duties of a district officer. An Englishman is a stronger man and is less apt to be influenced by anything of this sort, but even Englishmen in those few parts of the country where European planters abound, are not altogether safe against it. With native officers who are weaker this is sometimes apt to be a serious drawback.

The only advantage so far as I can see that a native official has over a European lies in his better knowledge of the people. We are, I think, sometimes apt to over-estimate this knowledge. We are apt to think of ourselves as living at one side of a thick purdah with all the people of the country, including our native officials, at the other, and to imagine that there is a sort of freemasonry among them all, and that they all understand each other thoroughly. Now, as a matter of fact, owing to differences of religion and caste, the native population is so much split up into sections, divided as it were into water-tight compartments, that this is very far from being the case, and very often when we are inclined to suspect that a native subordinate must have been well acquainted with something that has been going on and has been purposely keeping it to himself, we find that after all he has been as completely ignorant of it as ourselves.

* The pigs are owned by the village menials who are men of low caste. The Hindu zamindars use them only in performing certain propitiatory rites in the great temple of Seetla (the goddess of small-pox) at Gurgaon.

At the same time it must be admitted that a Hindu or Muhammadan official has a very great advantage over us in this respect. Unless he has become thoroughly Anglicized and denationalized he probably lives in the middle of the native town, and has numerous friends, at least of his own sect, dropping in morning and evening to smoke and chat with him and tell him all that is going on. He may also have about him relations or dependents either holding inferior positions in the offices or living on his bounty, who are thoroughly attached to him and who are of much use to him in procuring information.

European officers have not these advantages. They are with extremely few exceptions very "accessible," as we call it, to the people. Any one who has a grievance can lay it before them, and if for some reason he does not like to do so in open court, he can hang about the officer's gate or waylay him in the course of his ride. I myself rarely go outside my house or outside the enclosure of my camp without finding one or more men waiting for me with their petitions. Again, native gentlemen are very frequent visitors at our houses and talk with a considerable amount of freedom about many things that are going on. In camp there are opportunities of seeing more of the humbler people, as the headmen of the neighbouring villages are always about the officer's tent and eager to have a word with him. But all this passes in an official atmosphere and is very different from the sort of intercourse that a Hindu or Muhammadan official has with men of his own set. It makes all the difference in the world, as I found at Hyderabad, being able to sit down and eat or smoke with a man who meets you to some extent at least on a purely social footing. It is true that, owing to the way native society is split up, a native official cannot be exactly on these terms with men outside his own set, but if you manage to get into even one set in an Indian town you learn a good deal of other sets too. For these reasons I do not deny that the native officer has in the particular to which I am now referring an important advantage over the European officer. At the same time it must be borne in mind that there is this countervailing disadvantage that the more he is given to forming friendships with the people of his district the greater is the danger to which I have already referred of his getting involved in cliques and factions.

I have now finished what I have to say as to the comparative fitness of European and Indian officials for the higher duties of administration in this country.

But it may be asked, granting that Indians are less efficient, would it not be a wise policy for us as a foreign Government to employ them more largely, even at some sacrifice of efficiency, with a view to further popularising our administration.

To this I would answer most certainly, yes if it would really have the effect of further popularising our administration, that is to say, of making our administration more acceptable to the great mass of the people. But that I am perfectly sure it would not.

It is quite true that our Government is a foreign Government, and it is further true that some Englishmen have a domineering way about them which to certain people is far from pleasant. But to the great mass of the people this is of very little importance.

In almost all parts of British India (and it is the same in most of the larger native States) they have for very many generations been under a foreign rule of one sort or another, and the idea of being in any other position, the idea of taking any share in the government of the country, or obtaining any sort of political privileges never enters their heads. So long as we keep our taxes low, maintain order, prevent the strong oppressing the weak, administer justice impartially and, subject to this, leave people as much as possible alone, they will, unless they are stirred up, be quite contented under our rule; and as for the Englishman's domineering manner, it is enough to say that the people of this country are accustomed to be ruled with a strong hand, and that whatever exception may be taken by more sensitive people to the Englishman's manner, the manner of a Hindu or Muhammadan official to the common people is apt to be a very great deal more unpleasant.

We have, I am happy to say, many Hindu and Muhammadan officials who are, as they deserve to be, highly esteemed by the people and very popular wherever they go; but in all cases so far as my experience goes, when the people express any preference on the ground of race it is in favour of the English officer. They sometimes ask that an English officer should be appointed to a particular place, and they are constantly asking to have their cases transferred to an English officer, but I do not remember any requests to have an Indian appointed instead of an Englishman, or to have a case transferred from an Englishman to an Indian.

The truth is that the substitution of Indian for English officers in the higher posts would be popular only with the advanced Indians who still form, as Lord Dufferin said, but an infinitesimal fraction of the population. It would be popular with them for two reasons. In the first place, they differ from the mass of the people in this that many of them feel keenly being under a foreign yoke. I completely accept their assurance that they entertain no design to subvert British rule: but it is impossible to read their acrimonious attacks upon everything good, bad and indifferent in our administration without seeing that the feeling of many of them is a much deeper one than that of dissatisfaction with particular men or particular measures or even with particular institutions. In this I see nothing to be surprised at; our own feeling in their position would be the same; but what we should remember is that to men entertaining such a feeling the circumstance that the great majority of the higher posts are filled by Englishmen presents itself in the light of a bitter aggravation of the position. Add to this that these advanced Indians are, unlike the mass of the people, over-sensitive to an extreme degree, and that the Englishman, though his intentions may be the best in the world, is, as I have said, sometimes rather a domineering sort of person, and it will be easily understood why the advanced Indians, unlike the mass of the people, would prefer to see fewer Englishmen in the service.

The second reason for their wishing to see Indians substituted for Englishmen in the service is one so very natural that it calls for no elaborate explanation. It is that they expect that the appointments would fall to men of their own class.

Now, I am anxious to show to men of this class all possible consideration. We have ourselves made them what they are, and we are bound to do what we can for them. I may add that personally I have throughout my service been on the most friendly terms with them, and that, notwithstanding the tendency of some of them to bitterness against English officials, I have never had an unkind word from one of them. But there is obviously a limit to what we should be justified in doing for so very small a class as this when the interests of the great mass of the population are at stake. No doubt if a time should arrive when these advanced Indians would attain the position, to which they aspire, of being leaders and representatives of the great mass of the population, the question would assume a very different aspect; but there is at present so little prospect of their attaining that position in any part of the country, with which I am acquainted, that it is unnecessary to consider on this occasion what we should do in such an event.

Now I trust it will not be supposed from what I have written that I go so far as to think that Indians should be excluded altogether from the higher offices in this country. That is by no means my view, and as a matter of fact in the scheme which I as Chief Commissioner of the Central Provinces drew up in the year 1887 for submission to the Public Service Commission* I proposed that a larger proportion of the higher appointments in those Provinces should be opened to Indians than that Commission subsequently thought fit to assign to their Provincial Service. My view is merely that, as insisted on by the Secretary of State, some limitation should be put to the number of places to be held by Indians, and that, having regard to the considerations which I have stated, the proportion of places to be held by them should be a low one. As to what exactly it should be—that is a question on which, as on all questions of degree, there must be room for a certain amount of difference of opinion even among those who accept the same principles for its decision, and it is, moreover, a question which, having regard to the great variety of conditions prevailing in different parts of India, must be answered differently for different Provinces. As I have said, I was prepared to admit a larger proportion of Indians in the Central Provinces than the Public Service Commission were. In the Punjab, on the other hand, having regard to the more turbulent character of the people, to the circumstance that six of our districts march with the Afghan frontier, and that even in ordinary times, to say nothing of times of regular war, there is a great deal of *quasi*-military work to be done by our civil staff, I should certainly not be prepared to go so far in this direction as I was prepared to do in the Central Provinces, nor would I be prepared to go beyond the proportion fixed by the Government of India and the Secretary of State in accordance with, or as nearly as possible in accordance with, the recommendations of the Public Service Commission.

* I ought to mention that the scheme in question was never submitted to the Commission, because on the very day the letter submitting it ought to have been despatched, I received an order adding me to the Commission and I thought it best under the circumstances to reserve my opinion. After serving on the Commission only a few days I was transferred to another appointment

But whatever my individual opinion or anybody else's individual opinion might be on this question if it was now being started for the first time, it seems to me that to re-open a difficult question of this sort, and a question of degree—of more or less—which was settled only five years ago by a strong Commission of experts fully representing all conflicting interests, and to re-open it just as all the arrangements for giving effect to the decision of that Commission have been made, would be an unheard-of course, and one calculated to produce an impression that nothing could be taken as settled even for a reasonable time, and to make the work of governing a country like this well nigh impossible.

This brings me to the only point remaining for consideration, and that is in what manner the proportion of the higher appointments, whatever it may be, which we from time to time determine to give to Indians in addition to those they may win in England, should be distributed among them. This is a point which it is in one way easier for us to discuss than the previous one, inasmuch as it is one not between Englishmen and Indians, but one between different classes of Indians among themselves.

The first observation I would make upon it is that, assuming, as I am now doing, that there is to be some limitation to the number of Indians to be admitted in this country, it would be obviously inexpedient to have one and the same examination here and in England and to arrange the candidates in one and the same list. There is no difficulty about laying it down as a general rule that no more than a certain proportion of appointments should be allowed to go to Indians, but if this rule were to be given effect to by directing that *A*, an Indian candidate, who had beaten *B*, an English candidate, in an examination should give way to *B* because the fixed proportion of Indian places had already been assigned to Indians who had passed higher than both, *A* would feel that he had suffered a cruel injustice. I quite see that he ought not to feel this—that he ought to see that the result so far as he was concerned was merely the same that would follow if there were separate examinations for Englishmen and Indians, but he would beyond the shadow of a doubt feel it.

For this reason I think it is clear that if the places to be specially assigned to Indians were to be given to them by the method of competition in India, the examination for them would have to be separate from the examination in England.

The next question to be considered is, assuming that the examination in India would be separate from that in England, should there be one examination for all Indian candidates or a separate examination in each Presidency or Province confined to the natives of that Province. My opinion on this is that if the places are to be given by competition at all, there should most certainly be a separate examination for each Province to which only the natives of that Province would be admitted. There are several reasons for this. One is that, as I have already observed (page 50), the one advantage which an Indian has over an Englishman in the Civil Service is that he is more at home in the country he is governing, and the differences between the country and the people from one part of India to another are so immense that this advantage would be almost entirely lost if natives of one part were to be appointed to the Civil Service in another part. Another reason is that, apart from any question of knowledge of the country, the natives of one part would in some cases from their dispositions and ways and habits not be well fitted to discharge the duties of a civil officer in another part. The position in which a native of Bengal, *e.g.*, would find himself if he was appointed to be a Deputy Commissioner in the Punjab has been so often referred to in the course of these discussions that I need not dwell on it; but I may observe that conversely a Pathan if appointed to a similar office in Bengal would, I fear, not be found altogether suitable. Of course we would not be likely to have any large influx of Pathans by the gate of competition. I mention the point merely to show that the objection of the unfitness of natives of a particular Province to serve in another Province is not confined to the native of Bengal. A third reason for having a separate examination for each Province confined to the natives of the Province is the jealousy felt by the “*naukari pesha*” class as we call them—the class of persons seeking Government service—in one Province to the intrusion of men from another. This feeling of jealousy has been a source of trouble, and has formed the subject of correspondence in every part of India in which I have served. There was the question of Hindustanis in the Punjab before the Punjab was sufficiently advanced to supply its own men, the question of Bombay Brahmins in the Central Provinces, the question of Bengalis in Assam, the question of Madrasis in Mysore, and the question of Hindustanis in Hyderabad, all giving rise to much bad blood, and I do not think it would be desirable, if we can avoid doing so, to put the subordinate officers of one Province under the control of a superior officer drawn from another.

Another point on which I have to insist and that most strongly, is that if we were to have open competition for the higher appointments in the Punjab, it would be absolutely essential to divide the chances between the Hindus and Mussalmans by offering appointments alternately for competition among the members of each sect. Otherwise, as things stand at present, a Mussalman would rarely succeed and this, from a political point of view would have a most mischievous effect. Even as it is the Mussalmans are always complaining that they are ousted from office by the Hindus, and that thus the Hindus are set above them. Their newspapers are constantly harping on this, and they never lose an opportunity of bringing it to notice. Within the last week I have had four Mussalman visitors who were very strong on it, and I see that there has been a meeting of Mussalmans in Madras objecting to open competition, on the ground that it would place them in a worse position in this respect. No doubt it may be argued from the high *a priori* point of view that the remedy lies in the hands of the Mussalmans themselves; that if they will only study and fit themselves for competition with the Hindus, they can secure their proper share of the places. But we must treat a practical question of this sort as practical men. Open competition is not a thing for us to bow down before and worship. It is merely a means to an end, namely, the end of getting our service officered in the manner best adapted to our very peculiar position in this country, and if absolutely open competition would result in setting one of two great hostile parties above the other, we must have some sort of limited competition or give up competition altogether.

I have thought it necessary to discuss the conditions to be laid down in the event of the higher appointments in question being opened to competition because we have been ordered to do so; but the view I have held since this question was started many years ago is that they should not be given by competition at all, but should, as recently arranged in accordance with the recommendations of the Public Service Commission, be reserved for the best members of the Uncovenanted or Provincial Service.

I am of this opinion, first, because the Native Uncovenanted Service has immensely improved of late. It now embraces many officers of good education, great intelligence, and honesty, and large experience. Moreover, men of a better class are being brought into it day by day, and we may safely reckon on its steadily improving further and producing men fairly competent to fill the limited number of higher appointments in question. That being so, it seems to me that it is only a bare act of justice to improve the prospects of the Uncovenanted or Provincial Service as far as we possibly can, and I think the whole of the higher appointments which it is proposed to reserve for Indians are little enough for this purpose.

Secondly, I am of this opinion because the improvement of the prospects of the Uncovenanted Service that would be effected in this way would attract better men into it—a result which is in the highest degree desirable considering the immense amount of really important work which falls to the share of the Uncovenanted officers.

Thirdly, I am of this opinion because I am convinced that the best way of getting good men for the higher appointments to be reserved is by promotion from the Uncovenanted Service.

With reference to this third ground, I may observe that the case of Indians stands in this respect on a totally different footing from that of Europeans.

Our general administrative staff, including Covenanted and Uncovenanted, consists of a gradation of officers ascending continuously from the Tahsildar through the various grades of Extra Assistant Commissioners up to the higher offices of the service.

All these officers are employed on duties of the same kind, though varying in the degrees of their difficulty and importance—judicial work, revenue work, and executive work. That being so, the natural course, and the course that would be adopted under any circumstances except the very peculiar circumstances under which we rule in this country, would be that every one entering the service should be appointed first as a Tahsildar, or perhaps in some cases as an Extra Assistant Commissioner of the lowest grade, and then, after being subjected for some years to what the Duke of Argyll called “a competitive examination of the best kind,” that is to say, to the test of practical work, should rise regularly through the various grades to the position for which he might ultimately be thought fit. It is of course impossible to adopt this system in the case of our European officers, because we could not get men of the stamp required to come out here for the post of Tahsildar or Extra Assistant Commissioner, but there is no difficulty about adopting it in the case of Indians; for, we can, as things now stand in India, command the services of the very best young Indians for the post of Extra Assistant Commissioner, if not indeed for that of Tahsildar, and it is clearly the best course to adopt in their case. There is no test of fitness like that

of practical work. We can apply that test for choosing Indians for the higher posts to be reserved for them, and it is therefore the test that we should apply.

These were the views which I formed, as I say, when the question was first started, and while we were absolutely free to take any course we pleased regarding it. I have to add that one of the grounds on which they rest, namely, that of the claims of the Uncovenanted and Provincial Service, has since then become strengthened so as to become absolutely irresistible by our having committed ourselves to giving the share of the higher appointments reserved under the recommendations of the Public Service Commission for Indians to that service. I do not see how we could possibly take those appointments away from that service now and give them to others without the appearance of committing a downright breach of faith. No doubt we might if, notwithstanding all I have said, such a course was thought proper, declare that to save all vested rights the arrangement recently made should hold good during the incumbency of the existing members of the Provincial service, but that, when they are all out of the way, it should come to an end and a system of competition should be established; but this would be to provide now for something to be done at a point of time about 30 years hence, which would be absurd.

There is a further objection to competition for these higher appointments which has particular force in the Punjab, and to which I must accordingly refer. It is that the influential classes on whose assistance we must here rely to a great extent for aid, especially in times of trouble, and many of whom have stood by us in such times, strongly object to competition for any appointments, and would object to it particularly strongly for these higher appointments. They would understand to a certain extent the idea of a man who had served for many years in the Uncovenanted Service and had gained a high reputation in it being promoted to one of these higher appointments, though if he happened to be a man of low birth they would not like it; but what they could not understand is that when we propose to give a high appointment straight off to a young man beginning life we should give it to any young man that comes out best in a certain examination, though his father may be a man of low position and a man who has never done anything to help us, or may even be known to be an enemy to our rule, and though there may be men of influential position and having claims on our gratitude with sons fitted by ability and education to hold the appointment.

It may be objected that if the higher posts are given by way of promotion from the Uncovenanted or Provincial Service there will be room for favouritism, but to this there are two answers. The first is that owing to the barrier created by caste there is unfortunately but too little in the way of intimate personal friendship between the officers who are natives of the country and their European official superiors, and in particular between them and the higher European officers at head-quarters—the Lieutenant-Governor, Financial Commissioner, and the Judges of the High Court—with whom the selection for promotion would rest. The second answer is that when it comes to making a selection between men who have been long in the public service their relative claims are usually so clearly fixed that the high officials with whom the selection rests could hardly venture, even if they were inclined to do so, to favour one at the expense of the other. I may add that when we can be trusted to select (and it is a matter of pure selection) a man for a Commissionership from among the Deputy Commissioners, many of whom are our intimate personal friends, we may well be trusted so select a member of the Provincial Service for promotion to the appointments here in question.

The conclusion at which I arrive is that whatever there may be to be said about Provinces like Bengal and Madras, with which I am not acquainted, we should in the Punjab and the other parts of India with which I am acquainted, leave the whole matter for the present, and for a reasonable number of years to come on the footing on which it has been recently placed by the Government of India and the Secretary of State in accordance with the recommendations of the Public Service Commissioners.

For one reason I am sorry to have to come to this conclusion; for, far removed as we all are here from the English political arena, we are of course well aware that when a resolution of the House of Commons has been passed it is desirable if possible to do something in the direction indicated by it; but the point here at issue is of such immense importance to the proper administration of this great country that it would be downright criminal for any of us to deal with it otherwise than on its real merits.

Enclosure 2 in above.

Paragraphs 17 and 18 of letter, No. 146, dated 25th June 1888, from the PUNJAB GOVERNMENT, to the GOVERNMENT of INDIA, Home Department.

Para. 17. The Government of India is acquainted with the circumstances of the Punjab, and it is not necessary to repeat at length facts which are well known. Some of those circumstances have been well described in the memorandum on the special features of the Punjab bearing upon its administration printed at pages 34—38 of the Punjab volume of the proceedings of the Commission; and others have been alluded to in the further examination of Mr. Mackworth Young reported at pages 209—211 of the same volume. It may, however, be convenient to mention here some matters which ought never to be left out of view in dealing with such questions as the present. In comparison with most other Provinces, the Punjab has not been long annexed. It has changed with great rapidity, if regard be had to the usual rate of social changes, from a non-regulation to what is practically a regulation Province; but the population has not changed with the same rapidity as the form of administration; and, though education has affected some classes to a certain extent, and prosperity has affected many, and the advantages of peace have been usually enjoyed by all in the interior districts, the mass of the people remains much what it was before Sikh dominion gave place to British rule. Under native administrations in territories where classes of different creeds are closely intermingled, as they are in most parts of the Punjab, and particularly in the larger towns, either Hindus have dominated Muhammadans, or Muhammadans have subjugated and often oppressed Hindus. The creed in the ascendant has, speaking generally, left the other no chance of successful rivalry, and no alternative except enforced acceptance of a subordinate position. Where, however, British rule has been established, neither Hindu nor Muhammadan can see a reason for giving any kind of precedence to the other, and religious antagonism may seize opportunities of activity and even outbreak. Hence one cause of riots like those of Mooltan, Lahore, and Delhi, or at smaller places, such as Hoshiarpur and Karnal, and of the agitation against the slaughter of kine which is chronic in the Punjab. To face such affairs as these, a strong and impartial magistracy is required, possessed of physical and moral courage, and able to command respect and obedience. The population, however, is in most parts sturdy; and even where it is mild in type, is imbued with traditions that assign the lead to men belonging to particular tribes or castes, and to old families of more or less distinction within the circle of the caste or tribe. In the hill country the Rajputs, in the Central Punjab, the Jat Sikhs and other large landholding dominant tribes or clans, on the western frontier the Pathans and Biluchis—in fact, as in tradition—wield most strength and influence; but these, it need hardly be said, are not the men who would succeed in competitive examinations. Besides these, there are men of hereditary service, the sons and grandsons of the administrators and officials of Sikh times, whom it would be unwise and unfair to disappoint of the leaves and fishes of public employment, though this class could doubtless better hold their own in educational contests. On the immediate frontier peasants and officials alike must be on the watch against attack from without; and in the interior of the northern frontier districts the magistracy has to contend with all the troubles which arise amongst a turbulent population full of violence. Mr. Mackworth Young shows in his evidence that on the frontier generally there have been 44 sets of military operations or expeditions since 1849, and that the important operations since 1877 are eight in number. Nor must it be supposed that these facts have a significance merely of an historical kind. The frontier, it needs not be said, is still liable to raids; and the prevalence of violent crime, particularly in the Peshawar Division, has led to the enactment, only last year, of the Punjab Frontier Crimes Regulation. Moreover, in the Cis-Indus Districts crime of various kinds is unfortunately only too rife; and there is reason to fear that it is making head against the courts, the subordinate magistracy being under strong temptations to acquit when they find their decisions upset on technical, or what they suppose to be insufficient, grounds, and their proceedings drawn out and embarrassed by the arguments of educated or half-educated pleaders. Politically, the Punjab is the base from which authority was re-established in Northern India after the outbreak of the Mutiny. In recent years it has been the base of operations against Afghanistan and it may again become the base of trans-frontier warfare. Large demands were made upon the civil staff, not only in frontier districts, but all over the Punjab, for either transport or supplies, or both, during the Abyssinian Expedition in 1868, in the

Afghanistan campaign in 1878 to 1880, and during recent military preparations in 1885. To meet such demands, not only is a strong executive required, but it must be one which can secure the prompt co-operation of the people. Add to all this that the Punjab lies on the rear of the communications of any force operating from India against an enemy in Afghanistan or the countries beyond; and that for this vital reason the contentment of the Punjab is of the first consequence to the Empire; while that contentment is hardly likely to be assured unless the governing body continues to command the real obedience and respect of the population. For all these reasons, it would be, Sir James Lyall believes, a danger to the Empire if our hold on the Punjab were not strong; and it must be kept strong notwithstanding the special difficulties which are presented by its mixed and high-spirited people. Assuredly, we shall incur a grave culpability if we allow any measures which are of an optional kind to weaken our political position in the Punjab. To maintain the strength of that position we should so frame the measures here in view that we shall not fail in future to enlist in the public service the natural leaders of the people; men who will be able by their influence to uphold the cause of good government in ordinary times, and in times of trouble to carry the people with them in the loyal services then indispensable.

18. But if the door of competition be opened wider than it is, the inevitable result will be the recruitment of the great bulk of the service, not from amongst the classes who would naturally take the lead, but from amongst the men who obtain degrees in the Universities. The B.A.'s and M.A.'s, as our present experience shows, would be sure to win in the end, even with the restrictions of a selected list. With the view of testing to what classes the B.A.'s and M.A.'s belong, Sir James Lyall has closely examined the list of students who have passed the B.A. and M.A. examinations of the Punjab University from the year 1882 to 1888; a list for the years 1882—1886 is given in the evidence of Colonel Holroyd, Director of Public Instruction, at pages 106 to 107 of the Punjab volume of the Report. In these lists Sir James Lyall does not find a single Rajput, Pathan, Ghakkar, Sial, Moghal, Awan, Beloch, Jat, or in fact any member of the great landholding tribes in which the political power and fighting strength of the country has always resided, and still resides. The few men who call themselves Sikhs are all Khatri or Arora Sikhs—that is, men belonging to the classes who live by commerce or by service, and probably not at the present day real Sikhs at all. The Muhammadans proper are hardly represented, most of the few Muhammadan names which occur being those of men who belong to families converted from Hinduism, and which, as Hindus, belonged to the commercial or artisan classes. There are a few, but very few, men of good position amongst them—viz., one or two Kashmiri Pandits, one or two Khatri, a Shekh of Lahore, and a Saiyad of Delhi, all belonging to families whose hereditary profession is Government service, and who would probably have sought and obtained service under any régime; the rest are men of one type, Khatri and Baniyas and Aroras, and one or two Shekhs, the sons of shopkeepers or subordinate officials. The educational attainments of such men as these would, no doubt, enable some of them to fill a respectable place in a civilised and complicated system of administration. But in constituting the administrative staff we must, for the most part, look to men of a different stamp to help us to govern such a country as the Punjab with success at any time; and still more to help us to hold it if at any period our political position is less secure. Almost all of these graduates are also dwellers in towns as opposed to dwellers in the country; and in a Province where the rural population vastly exceeds the urban, and where there is so much distinction between the bodily vigour of the countryman and the townsman, it seems specially dangerous to give a practical monopoly of the upper part of the service to the townspcople.

From L. K. LAURIE, Esq., I.C.S., Officiating Secretary to the Chief Commissioner, Central Provinces, to the SECRETARY TO THE GOVERNMENT OF INDIA, Home Department. No. 6817.

Nagpur,
15th September 1893.
27 Public

I am directed to acknowledge the receipt of your letter, No. 1086, dated the 5th ultimo, forwarding, for an expression of the Officiating Chief Commissioner's opinion, a copy of a Despatch from the Secretary of State, dated 22nd June last, on

the subject of a Resolution passed by the House of Commons as to the holding of simultaneous examinations in India and England for the Indian Civil Service.

2. In reply I am to forward the accompanying printed copy of a minute containing Mr. Woodburn's opinion on the matter referred to him.

Enclosure in above.

SIMULTANEOUS EXAMINATIONS in INDIA and ENGLAND for the INDIAN CIVIL SERVICE.

I have been asked to give my opinion on the subject of the Resolution of the House of Commons as to the holding of simultaneous examinations in India and England for the Indian Civil Service.

2. The Despatch by which Her Majesty's Secretary of State for India has forwarded that Resolution for the consideration of the Government of India points out that it is indispensable that an adequate number of the members of the Civil Service shall always be Europeans, and that no scheme would be admissible which does not fulfil that essential condition. To decide what proportion of the appointments held by the Indian Civil Service can be safely given at the present time to natives of India, I do not think we can go behind the mature conclusion formulated and presented by the Indian Public Service Commission in 1888. They recommended that about 108 appointments should be removed from the list of 605 appointments in the judicial and executive service at that time reserved to the Imperial Civil Service under the Statute of 1870, a number in excess of the proportion of one-sixth of the same appointments thrown open under the Statutory rules then existing. In the immediately subordinate service of Uncovenanted Judges and Magistrates, I understand from the latest returns that out of a total number of 2,588, 2,553 are natives of India. I am aware of nothing that has happened during the last five years to discredit or disturb the very careful and deliberate opinion of the great Commission, to whom the examination of this and other questions connected with the public service of India was so lately entrusted.

3. Starting on that basis, then, and putting aside for the moment the issue whether the recruitment for these 108 appointments can best be made by competition, I proceed to consider what arrangements could most suitably and successfully be made for opening them to competition in India. The number of appointments to be so competed for would average six per annum. If these were offered to public competition in India at a single examination conducted simultaneously with the examination in London, they would fall necessarily to the graduates of the most advanced colleges in Calcutta and Bombay. I have no means of comparing the relative excellence of these great schools, but it is the general opinion that the majority of the successful candidates would be graduates of Calcutta. How far it would be politically expedient and safe to officer by Bengali graduates a service which has to govern martial and turbulent races may I think be best illustrated by the remark of one of the shrewdest and most able Rajas of the Upper Provinces. He told me he had been in Calcutta and attended a debating society there when the subject of discussion was the larger employment of natives in the higher ranks of the public service. When the debate closed, he yielded with great reluctance to the demand that he should state his own opinion. He speaks a broken but nervous English. He said he now knew what his Bengali countrymen wished: they wanted all to be Judges, Collectors, and Commissioners, with an English army to keep them in those positions. "Well, gentlemen," he ended, "British empire perhaps not, but Bengali empire never." The anecdote is only an illustration of what is familiar to everyone who knows Upper India. The experiment of government by Bengali graduates is impracticable. It is foredoomed, not to failure, but to disaster.

4. The plan in another form seems more feasible. Let it be recognised that India is in truth a congeries of nations in which the conditions of education and intellectual development are very diverse, in which traditions are strong and international jealousies are keen. To prevent one race obtaining dominion over others, absolutely alien in language and character, let there be not one simultaneous examination for India but half a dozen: let each of the great Provinces have annually allotted to it one of the six appointments to be reserved to India, and if the less advanced Provinces get under this device men of less education and intellectual calibre, they will at least have men for their administrative service who are native to the soil. This method is so much more attractive and hopeful that it is with regret that one finds that it has already been tried

and found wanting. In the papers which have been sent by the Government of India it appears that the Government of Bengal opened to public competition the Deputy Collectorships, which were the highest office in the Provincial Service. But the orders were re-called because it was found that they entirely excluded from representation in the service of the State the Mahomedans, who constitute one-third of the population of Bengal. In the Punjab a plan of this sort would make masters over the stalwart Sikhs of the clerkly classes, who have been their servants. In these Provinces I am glad to say there are at this moment two native officers in charge of districts—one a Brahman, the other a Mahomedan. Neither has yet been put to the proof of resolution and resource by emergency, but both have conducted their duties to the entire satisfaction of Sir Antony MacDonnell and myself. Both belong to the classes which are the recognised leaders of native society, and they are respected and obeyed; but neither would ever have been a Deputy Commissioner under a system of even provincial competition. One entered the service of Government in the Subordinate Civil Service, the other in the Statutory Service, and both have made their way by the proved merit and ability which was their only claim to superior advancement. Of the 72 B.A.'s who have passed from these Provinces in the last five years, 51 were Mahrattas, a class whose employment in the service of the Administration I find my distinguished predecessor, Sir Alexander Mackenzie, in his minute for the Public Service Commission, was, for reasons given, particularly desirous to limit. But according to the educational statistics they are the class which would monopolise all appointments in these Provinces under a plan of open competition.

5. There is under the competition plan one more alternative,—to recruit partly by competition and partly by selection. This, I think, is a compromise which will satisfy neither party to the discussion. It may answer for the recruitment of a large service like the Provincial Service of Bengal, but within the narrow limits of the Imperial Service of administration and control it either furnishes an inadequate reply to the aspirations of the colleges, or it checks the Government in the application of the system which experience may possibly show is yielding the best men. It would dislocate without actually subverting the system which has lately been introduced, on the advice of the Public Service Commission, and under which, as a matter of fact, three graduates are entertained in a service which gives them opportunity of rising to the highest rank, for one who would enter the Imperial Service by open competition. It is true that two of the three will probably be disappointed of attainment to the Imperial Service, but so they would be in any case, and they are at least provided with posts suited to their actual capacities.

6. The Commission of 1887-88 had among its members representative natives of each of the great Provinces of India. It was the unanimous and carefully formed conclusion of that Commission, after a laborious record of evidence in every part of the country, that the system best suited to the present circumstances of India and to the stability of good government was not one of simultaneous competition, but of promotion by proved merit and ability to the high appointments which they excluded from the schedule of the European Civil Service. It was not without mature consideration of all the arguments that can be urged for a competition system that they came to this unanimous decision. Their reasons are given in their Report, and I venture to say that they commend themselves to every one who knows the classes who in India compete, and who regards with attention the classes who have to be ruled and the functions and duties of the rulers. I have read with care the whole of the evidence which was recorded before the Commission in these Provinces, and I have had opportunity in a recent tour to hear and mark the views of all classes of intelligent natives on this gravely important issue. The outcome in both paths of inquiry is the same. No native who has any stake in the country beyond a college diploma wants competition for the superior service. In the words of the Director of Public Instruction to the Commission, an officer of 31 years of experience in education in India:—"The younger class of educated Hindus would have all appointments thrown open to public competition. The older and more experienced think that merit and ability should have been proved in the Government service or in the exercise of a profession." And the Secretary to this Administration, than whom the natives of these Provinces have no more kindly and intimate friend, said:—"Our bankers and landowners view our educated men (until tried and found trustworthy) with grave and avowed suspicion."

7. The judgment of the Commission was the sober judgment of Parliament in 1870. The statute of that year opened the door of preferment to the native upon this principle

but left the extent of the practical application of the principle undefined. The Commission of 1888 definitely stated the appointments which were hereafter to be reserved for natives. So far as my own knowledge of the natives of India can carry me—and I think I may say that few officials have seen more of them—it is in accord with all the best and soundest native opinion that the first experiments in advancement to these posts shall be after trial, and not upon the mere results of an educational test.

8. The former plan is the only one by which at present we can recruit young men from the classes of hereditary influence whom it is of the first political importance to secure to the service of the Crown and on the side of the State. It is also in accord with that method of circumspect and cautious progress which has made solid the foundations of the British Empire throughout its history. The suggestion that we shall substitute competition for tried merit is the suggestion of sentiment, the most fascinating and the most dangerous of guides, and one is irresistibly reminded of the final verdict of Baron Hubner, the astutest of all the recent critics of the British Government of India, who saw the chivalrous side of the English character:—"The British dominion is firmly seated in India: England has but one enemy to fear: it is herself."

(Signed) J. WOODBURN,
Offg. Chief Commissioner, Central Provinces.

7th September 1893.

From E. S. SYMES, Esq., C.I.E., Chief Secretary to the Chief Commissioner of Burma, to the SECRETARY TO THE GOVERNMENT OF INDIA, Home Department. No. 780-1C.—6.

Sir,

Rangoon,
25th August 1893.

In reply to your letter, No. 27 P.-1087, dated the 5th August, I am directed to submit a note by the Officiating Chief Commissioner on the subject of the Resolution passed by the House of Commons as to the holding of simultaneous examinations in India and England for the Indian Civil Service.

I have, &c.
(Signed) E. S. SYMES,
Chief Secretary.

Enclosure in above.

Note on a DESPATCH from the SECRETARY OF STATE FOR INDIA to the GOVERNMENT of INDIA, dated the 22nd June 1893, on the subject of the holding of simultaneous examinations for the Civil Service of India in England and India.

The first question on which my opinion is invited in the Secretary to the Government of India, Home Department's letter, No. 27-1087, Public, dated the 5th of August 1890, is—

"Whether the adoption of the proposal embodied in the Resolution of the House of Commons, that all competitive examinations heretofore held in England alone for appointment to the Civil Services of India shall henceforth be held simultaneously both in India and England, such examinations in both countries being identical in their nature, and all who compete being finally classified in one list according to merit, would be practicable and expedient, and whether the Resolution, in the form in which it stands, could be carried into effect?"

That the Resolution in its entirety cannot be carried into effect consistently with the maintenance of the essential condition that an adequate number of the members of the Civil Service shall always be Europeans is sufficiently obvious and is practically admitted by the Secretary of State in paragraph 3 of his Despatch.

2. The next question on which my opinion is asked, is—

“What is the minimum proportion of Europeans, who must, under present conditions, be employed in those offices which are in the *cadre* of the Indian Civil Service (including the *cadre* posts listed as open to the Provincial Service)?”

In my opinion the lowest proportion which it is at present safe to accept is five-sixths as recommended by the Public Service Commission and accepted by the Government of Lord Dufferin and the late Secretary of State. This proportion erred, if at all, in throwing open too large a proportion of high appointments to the Provincial Service, and any lower proportion than five-sixths would, under present circumstances, fail to satisfy the essential condition prescribed by the Secretary of State. In Burma I consider that natives of India should not be appointed at all to any executive offices reserved for members of the Burma Commission. Natives of India are regarded with dislike, and I am afraid I must add, contempt by Burmans, and I think it would be exceedingly unwise to employ natives of India in any executive offices now reserved for members of the Burma Commission. Any natives so employed should be natives of Burma, and not natives of India. I may state here that I consider that even natives of India who have entered the Civil Service by open competition in London should not be sent to Burma. Up to 1892 no native civilians were sent to Burma. In 1892, one Mahomedan, native of Bengal, and one Hindu, native of Bombay, were sent. Although I consider both these gentlemen unfitted for service in Burma, and although they themselves are never likely to be happy or contented in Burma, I have not hitherto thought it my duty to submit any protest on the subject. I deemed it better to wait and see how they accommodated themselves to the conditions of life in Burma, and I am aware that it is not expedient that natives, who enter the Civil Service by open competition in London, should be treated differently from their European associates. I hope, mainly for the sake of the Province, but partly also for the sake of the native civilians themselves, who consider service in Burma as service in exile, that no more Indians will be sent to Burma, and that Burma may be left out of consideration in any scheme for holding simultaneous examinations for the Indian Civil Service until such time as education in Burma is sufficiently advanced to render it possible for Burmans to compete for these appointments with some chance of success. Whilst I hold that five-sixths is the lowest proportion of Civil Service appointments which it is safe to retain for Europeans, I wish to remark that as far as possible, the one-sixth of natives admissible to the Civil Service should be employed in the Provinces of which they are natives. A Bengali, Madrasi, or other native of the more settled Indian Provinces in charge of a Punjab frontier district or of a Burma district during an outbreak of dacoity would be singularly out of place and a cause of great danger to the State. Religion, too, will afford a great drawback to the employment of native civilians. It is difficult to contemplate with equanimity the prospect of a Hindu or Mahomedan district magistrate in charge of a district in which religious riots, such as have recently disgraced Burma, the North-western Provinces, and Bombay, might occur. Even if such a magistrate were impartial, those of the opposite religion would never believe in his impartiality. The posting of native civilians will, therefore, need to be most carefully considered, and it is only in anticipation that this will be done that I can with hesitation concede that it is safe to admit so large a proportion of natives as one-sixth into the Indian Civil Service.

3. The third question to which I am asked to reply is—

“If the conclusion arrived at by you is that the proposal for simultaneous examinations on the lines indicated in the Resolution of the House of Commons cannot in its entirety be carried into effect, the third question for consideration will arise, namely, whether any conditions or limitations could be devised under which the principle of competition might be adopted in recruiting natives of India in this country for the Civil Service?”

I have expressed my very decided opinion that the proposal contained in the Resolution of the House of Commons cannot be carried into effect in its entirety, and I quite concur in the conclusion arrived at by the Governor General in Council that any such system of competition which might be introduced would have to be made subject to the conditions and limitations stated in paragraph 21 of the Government of India letter. Subject to these restrictions, which proceed on the assumption that it will still be open to natives of India to enter the service by competition in England, it seems to me that the third of the different methods of competition suggested by the Government of India is the one which should be adopted. It seems to me some-

what doubtful whether in those Provinces in which education is still backward and in which the examinations held have not hitherto demanded any very great skill or experience on the part of the examiners it will be easy to arrange to hold an examination of the nature indicated. In Burma, for instance, I think that the proper conduct of such an examination will be a matter of some difficulty. This difficulty is not, however, insuperable, and I only refer to it because it will require to be considered in connexion with the rules which have to be framed under the Statute of 1870 for regulating the competition. I am inclined to consider that success at a literary examination is not, by itself, among natives of India, a sufficient test of fitness for high office, and I would recommend that candidates for examination under the third method, which is the one I prefer, should not be admitted to examination without a certificate from the head of the district in which they reside, that they are suitable candidates for admission to the Civil Service of India. In Burma, a certain number of candidates for the Subordinate or Provincial Service are admitted by competition carefully safeguarded by nomination, and the balance of appointments are reserved for Government servants of proved merit and ability. It might be possible to apply this system to the selection of persons to fill the higher appointments reserved for natives of India. Half the whole number of appointments might be filled by competition, subject to the certificate of fitness aforesaid, and half might be filled by selection from the Provincial Services. This plan would to a certain extent prevent the disappointment which the adoption of the new system will cause to members of the Provincial Service, and it might also meet the aspirations of those who seek admission to the Civil Service by examinations to be held in India. If this suggestion is not considered suitable, then I am in favour of the third method suggested by the Government of India in its entirety.

Every candidate selected by examination in India, ought, I think, to proceed to England for the proscribed year of subsequent training. This will assure that the candidates shall become more or less familiarised with European habits and methods of thought, and it will accustom them to mix with Englishmen on a more equal footing than natives of India are ordinarily in the habit of doing in India.

4. I now come to the fourth question in which I am asked to consider—

“Whether the introduction in supersession of the existing arrangements of the competitive principle in any of the above methods, or in any other method which I may prefer to suggest as more suitable to local conditions, would be desirable or open to objection?”

In reply to this question I desire to say very emphatically that I consider that there is no test of fitness to hold the highest appointments so sure as actual work in subordinate appointments, and I cannot but think that it will be cause for regret if the proposals of the Public Service Commission, as set forth in paragraph 77 of their report and as generally approved by the Government of India and the Secretary of State, are set aside. I think that the method of appointing natives of India to the Imperial Civil Service recommended by the Commission and adopted by the Government of India as the basis of the provincial scheme is an infinitely better method than competition. By the first method persons who have already proved their fitness for high office would obtain it, whilst by the second method men who are quite untried, who may or may not belong to the classes which the people have been accustomed to regard as the ruling classes and who may have none of the vigour of mind and moral qualification which we are accustomed to expect in members of the Covenanted Civil Service, will occupy the positions which the Public Service Commission would have assigned to men of tried ability to whom so weighty a trust would have been confided without any great misgiving. I am quite sure that if the millions of India who take no part in political agitation could be consulted they would by a vast majority elect to be ruled by men who have risen in the service by merit rather than by men of whom they know nothing, and who know nothing of them, and whose only claim to be enlisted amongst the rulers of the land is that they have succeeded in passing a literary test. The members of the Provincial Service will also suffer grave disappointment when they find that they are debarred from rising as the reward of merit and capacity to those higher covenanted offices which they have, without doubt, been led to hope for by the publication of the intentions of Government in 1889. I do not believe that the competitive system will be likely to attract to the public service a class of men superior to those who are now willing to join the Provincial Service; on the contrary, I think the class of men who will enter the public service by competition will be inferior to those who would enter it through the Provincial Service. At present all classes, the sons of

princes and nobles, the sons of country gentlemen and yeomen, the sons of officials, the sons of members of the learned professions,—are only too anxious to be admitted to the Provincial Service, and the chief difficulty is that of selection. Under the new system the Provincial Service will become a distinctly subordinate service and will consequently lose much of its attraction, whilst instead of obtaining recruits for the higher Covenanted Service by selection from a wide field, we shall obtain men of a type which does not promise well and which will be most unacceptable to the more vigorous and warlike races of India.

In Burma the competitive system is liable to the greatest objection because, as I have explained, it is highly undesirable that natives of India should under any circumstances be deputed to serve in the higher executive appointments in Burma, and as yet no Burmans have succeeded in passing the competitive examination for the Indian Civil Service, and though there may be one or two exceptions, Burmans have not as a rule as yet acquired the educational qualifications necessary to enable them to pass these examinations.

5. Though the Provincial Service scheme has not yet been extended to Burma, I see no reason why it should not be so extended in due time and thus the Burmans will find their admission to high office delayed if the Resolution of the House of Commons is carried into effect, and will be apt to draw unfavourable comparisons between the advantages they enjoy and those enjoyed by natives of other Indian Provinces, and to become discontented. They will consider themselves to have a legitimate grievance if natives of India are set over them, and will, I am convinced, resent the exercise of authority with regard to them by persons whom they have not been accustomed to respect. Burmans are not naturally submissive, and any such experiment is likely to result in consequences which will be embarrassing to the Administration.

F. W. R. FRYER,

Officiating Chief Commissioner.

18th August 1893.

From the SECRETARY TO THE CHIEF COMMISSIONER OF ASSAM to the SECRETARY TO THE GOVERNMENT OF INDIA; Home Department.

Sir,

Shillong,

25th August 1893.

I am directed to acknowledge the receipt of your letter, No. 27 Pub.—1088, dated the 5th August 1893, forwarding, for an expression of the Chief Commissioner's opinion, a copy of a Despatch from the Secretary of State, dated the 22nd June last, on the subject of a Resolution passed by the House of Commons as to the holding of simultaneous examinations in India and England for the Indian Civil Service. The particular questions on which the opinion of the Chief Commissioner is desired are stated to be the following :—

- (1.) Whether the adoption of the proposal made in the Resolution referred to would be practicable and expedient, and whether the Resolution, in the form in which it stands, could be carried into effect;
- (2.) What is the *minimum* proportion of Europeans who must, under present conditions, be employed in those offices which are in the *cadre* of the Indian Civil Service (including the *cadre* posts listed as open to the Provincial Services); and
- (3.) In the event of the conclusion arrived at by the Chief Commissioner being that the proposal for simultaneous examinations on the lines indicated in the Resolution of the House of Commons cannot, in its entirety, be carried into effect, whether any conditions or limitations can be devised under which the principle of competition might be adopted in recruiting natives of India in this country for the Civil Service.

2. As regards the first of the above questions, I am to say that while, in the opinion of the Chief Commissioner, the practicability of adopting the proposal made in the Resolution is at least open to grave doubt, its inexpediency, from an administrative

point of view, is undeniable. In paragraph 60 of the report of the Public Service Commission two practical difficulties to the establishment in India of competitive examinations for the Civil Service are mentioned, namely, the difficulty which would be experienced in maintaining the secrecy of the examination papers, and in making satisfactory arrangements for that portion of the examination which is conducted *vivâ voce*. These appear to the Chief Commissioner to constitute real difficulties; but even if they could be overcome, there would still remain the difficulties and objections which were forcibly represented by numerous witnesses, many of them persons of considerable experience and whose opinions are entitled to every weight, when examined before the Public Service Commission. Similarly, apart from the question of practicability, the Public Service Commission, on a full consideration of the evidence before it, arrived at the conclusion that it was inexpedient to hold an examination in India for the Covenanted Civil Service simultaneously with the examination in

London, and the Chief Commissioner has no hesitation in expressing his concurrence in that view for the reasons* given by the Commission.

3. In considering the second question I am to say that the Chief Commissioner would wish it to be understood that he is dealing with the matter with reference to the requirements of the public service in the Province with which he is most intimately acquainted and for the administration of which he is at present responsible; and from this point of

* Pages 82-84 of Proceedings of the Public Service Commission, Volume VI.

view Mr. Ward considers it only necessary to invite attention to the memorandum* forwarded to the Secretary to the Public Service Commission with this office letter, No. 2898, dated the 24th May 1887, and to the opinions expressed by his predecessors in office, Sir D. Fitzpatrick and Mr. Quinton, in letters to the Home Department, No. 2444 and No. 9411 G., dated the 27th April 1888 and 15th November 1890 respectively. To this question Mr. Ward can only repeat the answer previously given, viz., that it would be unsafe to reduce the European element in the Assam Commission, and that the preponderant administrative needs, circumstances, and aptitudes of the Province imperatively require that the head of the administration of each district, with perhaps one exception, should be a European officer. The one exception referred to is the district of Goalpara, and as pointed out in the memorandum of the 24th May 1887 prepared for the Public Service Commission, if under any circumstances a native officer were placed in charge of Goalpara, he would require to be a man of very special qualifications, and it would be most inconvenient administratively to have only one such post susceptible of being held by a native incumbent.

4. Lastly, as regards the question whether any conditions or limitations could be devised under which the principle of competition might be adopted in recruiting natives of India in this country for the Civil Service, I am to say that the Chief Commissioner fully accepts the view expressed by the Governor General in Council in paragraph 21 of your letter under reply that any such scheme of competition which might be introduced would have to be made subject to the under-mentioned conditions and limitations:—(1) That the one-sixth of the covenanted offices listed as open, or available for transfer, to the Provincial Civil Service should be withdrawn from that service; (2) that not more than this one-sixth—or whatever other *maximum* proportion may be decided upon—should be offered for competition in India; and (3) that such competition should be entirely separate from that held in England, and should be regulated by rules under the Statute of 1870. As regards the particular method of competition to be adopted in India, Mr. Ward would advise the adoption of the third of the systems suggested in paragraph 21 of your letter, namely, the holding of a separate examination for each Province open to natives of India domiciled in the Province, but with the condition that only a proportion of the vacancies (say one-half) should be filled by pure competition and the balance by selection from among the candidates who had done fairly well in the examination in such a manner as to give each class, race, creed, and section of the people, as far as possible, a fair share of the appointments. In expressing this opinion, however, Mr. Ward must guard against being understood to imply that any such system could be followed in Assam within any reasonable period. As observed by the Government of India in paragraph 4 of Home Department Resolution, No. 9 Pub.—1342-1352, dated the 21st April 1892, the Provincial Service in Assam is largely recruited from Bengal, and it would be almost, if not quite, impossible, in view of the progress in education and the administrative aptitudes of the people, to find within any time which can now be foreseen, an indigenous officer who could be utilised in one of the higher posts. The Chief Commissioner also wishes it

to be understood that although he prefers the third method suggested by the Government of India to either of the other two, he only supports it as being, in his opinion, the least open to objection of any of those put forward. At the same time it should be clearly realised that if any such scheme were introduced in Assam, the persons who would succeed, or even do fairly well, at the examination, would not, for a very considerable time to come, be natives of the Province properly so called, but would be outsiders from the larger and more advanced Provinces domiciled in Assam.

I have, &c.

(Signed) F. C. DAUKES,
Secretary to the Chief Commissioner of Assam.

MEMORANDUM inclosed in Letter from the GOVERNMENT OF INDIA to the SECRETARY OF STATE, No. 62, dated 1st November 1893 (see page 4).

This memorandum is divided into seven parts, severally dealing with the following subjects:—

- I.—The constitution of the Covenanted Civil Service and its position in the scheme of the public service in India (paragraphs 1 to 9).
- II.—The constitution, &c. of the Provincial and Subordinate Civil Services (paragraphs 10 to 13).
- III.—Parliamentary legislation affecting the Covenanted Civil Service (paragraphs 14 and 15).
- IV.—The history of the measures taken in recent years for extending the employment of natives of India in Covenanted offices—
 - (i.) Up to the appointment of the Public Service Commission (paragraphs 16 to 25).
 - (ii.) The Public Service Commission and their recommendations (paragraphs 26 to 29).
 - (iii.) The present Provincial Service scheme (paragraphs 30 to 37).
- V.—The history of the measures taken for extending the employment of natives of India in the Provincial and Subordinate Civil Services (paragraphs 38 and 39).
- VI.—The history of the competitive system as applied to recruitment in England for the Covenanted Service (paragraphs 40 to 44).
- VII.—The history of the competitive system as applied to, or proposed for, recruitment in India for the Provincial Civil Service (paragraphs 45 to 47).

I.—THE COVENANTED CIVIL SERVICE.

1. Up to the time when the Public Service Commission was appointed, 1886–87 (paragraph 25 below), the Indian Civil Service was called the “Covenanted Civil Service.” This designation, however, established or rather perpetuated an invidious distinction not only as between the Covenanted Service and the Subordinate Services employed in the same branches of the administration, but also as between that service and the entirely separate special departments, many of which were often classed together as the “Uncovenanted” Services. The Public Service Commission recommended that the use of the terms “Covenanted” and “Uncovenanted” should be discontinued, and that the Covenanted Service should be called the “Imperial Civil Service.” The former recommendation has now been carried out; but, in accordance with the decision in Lord Cross’s Despatch, No. 104, dated the 12th September 1889, the term “Imperial” has not been adopted, and this service is now called the “Civil Service of India” (the term used in the statute under which appointments are made to it in England—21 & 22 Vict. c. 106. s. 32), or, more generally, the “Indian Civil Service.”

As, however, the facts and discussions to which reference is made in this memorandum relate largely to a period before the designation was changed, it will be convenient (to avoid confusion) to call this service throughout the Covenanted Civil Service, and the posts or offices ordinarily held by its members “covenanted” offices, as distinguished from the posts held by members of the Indian-recruited Executive and Judicial Services.

2. It is necessary to explain at the outset what the Covenanted Civil Service is. The

The administration of India is conducted by several distinct services or departments—separate, but having many points of contact.

The scheme of the public services in India divides the machinery for the civil administration into (1) the “Civil Services” in charge of the general administration; and (2) several special services or departments, in most of which professional or technical knowledge or special experience is required. These special services are the public works, forests, survey, telegraphs, postal, education, police, jails, accounts, customs, salt, opium, registration, and a few other miscellaneous or scientific departments. The medical department, except in its subordinate branches, is practically a military department, the services of its officers being lent for civil employ. The duties of the special departments are sufficiently clear from their titles. The Civil Services, or the “Executive” and “Judicial” Departments, as they are often called, are in charge of the administration of civil and criminal justice, and of all branches of the revenue and general administration which are not made over to one or other of the special departments. In each of these various departments (as also in the Executive and Judicial) it is determined on independent grounds what number and proportion of the posts approximately should be held by Europeans and natives of India, for what posts and proportion of posts recruitment should be made in India and in England respectively, and (in a few cases) whether and to what extent it is necessary that covenanted civilians should be employed in it. This memorandum is not concerned with these special departments, except so far as they affect the constitution of the Covenanted Service. From the statement which will be referred to in the next paragraph (Appendix I. to this memorandum), it will be seen that there are 33 posts in these departments, to fill which covenanted civilians are recruited. There is also a separate Political Service, which, though in one sense not a special department, is entirely distinct from the Executive and Judicial Departments in British India. The Covenanted Service is recruited so as to supply civilians to fill 41 political posts directly under the Government of India in the Foreign Department or under Local Governments and Administrations; these officers are employed either in native States or border tracts, or among frontier tribes. There are thus 74 posts in the political and special services included in the *cadre* (i.e., the scale of sanctioned offices—see paragraph 3) of the Covenanted Civil Service.

It will not be necessary to consider these special services or the 74 covenanted offices

The case of each service or department must be considered separately. Each has its separate functions, constitution, and apportionment of appointments between natives and Europeans determined on independent grounds.

included in them, any further, as the apportionment of appointments in each service between natives of India and Europeans is determined on a separate consideration of the requirements of each service, the general principle being that such a proportion of Europeans as is considered indispensable for efficient administration and for the proper supervision and control of the department should be maintained in it. It is necessary, however, to convey the caution that no comparison between the numbers and proportions of European and native officers employed in India in any particular grades or on any particular salaries can create any accurate impression unless the case of each department is separately dealt with, the higher and lower grades taken together, and the requirements of each case fully considered. It is naturally in the higher grades that European supervision is mostly required; and the rate of remuneration required to attract qualified European officers is necessarily higher than that required for native officers.

3. A statement is attached as Appendix I. to this memorandum showing the *cadre* of

The Covenanted Civil Service belongs to the “Executive” and “Judicial” Departments in charge of the general (i.e., revenue, criminal, and civil judicial) administration and other subjects of business not assigned to any special department.

the Covenanted Service, the

It is the superior or controlling branch of these departments, the “Provincial” and “Subordinate” Civil Services being the intermediate and lower branches.

the Covenanted Civil Service (i.e., the sanctioned scale and number of offices to fill which covenanted civilians are recruited) as it stood at the beginning of this year. It contains 824 offices which fall within the Executive and Judicial Departments. Before the date of the Public Service Commission's Report (paragraph 26 *ff.*), the Executive and Judicial Departments were divided into (1) members of which were appointed in England; and (2) the Subordinate or Uncovenanted Executive and Judicial Services, to which appointments were made in India. Natives of India were appointed specially to offices in the Covenanted Service, and were then known as “Statutory Civilians” (paragraph 22); but covenanted posts were not

open to members of the Subordinate Services as such. The Government of India have recently reorganised these departments in communication with the Secretary of State after

carefully considering the Public Service Commission's Report, and have divided them into (1) the Covenanted, now called "Indian" Civil Service; (2) the Provincial Civil Services, Executive and Judicial Branches; and (3) the Subordinate Civil Services. The Indian Civil Service is recruited in England and its members are liable to service all over India; the two latter services are recruited in India and for each Province separately. The Provincial Services consist of the higher branches, and the Subordinate Services of the lower branches, of what were formerly known as the Subordinate Executive and Judicial Services. In lieu of the former system of appointing natives of India as statutory civilians without previous experience in the Provincial Service, a proportion of the covenanted posts has now been set apart in each Province where the scheme has been introduced (that is to say in all Provinces except Burma and Assam), to which members of either branch of the Provincial Service can rise by merit and ability (paragraph 30 ff.). The great bulk of the offices in the executive and judicial administration is filled by members of the Provincial and Subordinate Services, and the strength of the Covenanted Service is restricted to the number absolutely necessary to fill the supervising and controlling offices for which Europeans are required. It is the established principle to enlarge the field of employment for natives of India by excluding from the *cadre* of the Covenanted Civil Service and amalgamating with the Indian-recruited Subordinate (now Provincial) Services all posts and classes of posts for which, from time to time, it is not considered absolutely necessary that recruitment should ordinarily be made in England.

4. For purposes of administration British India is divided into "Provinces." It

The Covenanted Service is recruited to fill specified executive and judicial charges called "covenanted offices." The most important of these offices are:—

will be seen on reference to the statement which forms Appendix I. that these Provinces, excluding the areas under political control and the very small Province of Coorg, in which no covenanted officers are employed, are (1) the Madras Presidency, (2) the Bombay Presidency, including Sind, (3) the Lower Provinces of Bengal, (4) the North-western Provinces and Oudh, (5) the Punjab, (6) Burma, (7) the Central Provinces, and (8) Assam. The first four are known as "Regulation" Provinces, though there are portions of them which are non-Regulation, and the last four as "Non-Regulation" Provinces. The non-Regulation Provinces were originally those to which the Acts and Regulations in force in the Regulation Provinces had not been applied, and which were not under the regular system of administration; but it is needless to say that all Provinces are now under a uniform system of law, and that the methods of administration have been practically assimilated. Speaking generally, however, the non-Regulation Provinces were acquired later, and, not having been so long under British rule, are more backward and less developed than the Regulation Provinces.

In the Madras and Bombay Presidencies the administration is presided over by a Governor (usually appointed from England), with whom is associated an Executive

those of Lieutenant-Governors, Members of Council, and Chief Commissioners, who form the governments or heads of the administration in each province;

Council of three members, viz., the Commander-in-Chief and two covenanted civilians. In the other Provinces there is no Executive Council, and the head of the administration conducts the government of the Province, aided by his secretaries and departmental advisers. He is ordinarily selected from the Covenanted Service, and is styled "Lieutenant-Governor" in the Lower Provinces of Bengal, the North-western Provinces, and the Punjab, and "Chief Commissioner" in Burma, the Central Provinces, and Assam. These offices, together with three seats in the Executive Council of the Governor General of India are the 13 highest offices in the *cadre* of the service. The provincial administrations, presided over by a Governor or Lieutenant-Governor, are known as "Local Governments," and those under a Chief Commissioner as "Local Administrations."

At the head of the Judicial Department there is in each of the Regulation Provinces a proportion of the High Court judgeships, judicial commissionerships, &c.;

a High Court, of which not less than one-third of the judges (including the Chief Justice) must under statute be barristers-at-law, and not less than one-third covenanted civilians. In the non-Regulation Provinces—except Assam, which is subject to the Calcutta High Court, and the Punjab—the head of the Judicial Department is the Judicial Commissioner, who is ordinarily a covenanted civilian. There are separate Judicial Commissioners for Upper Burma, Lower Burma, the Central Provinces, and Sind. In Oudh there are two Judicial Commissioners, one of whom may be, and at present is, a barrister. In the Punjab there is a mixed Chief Court on the model of the High Courts. These courts and the Judicial Commissioners not only discharge judicial functions, but have important administrative duties in connexion with the

working of subordinate courts in the Province. Twenty-two offices of this class are included in the *cadre* of the Covenanted Service.

Subject to the control of the Local Government or Administration, the heads of the revenue administration, including the important branch of land revenue, in each Province, are the boards of revenue in the Regulation Provinces and financial commissioners in the non-Regulation Provinces. In Bombay, however, there is no board of revenue, and in the Central Provinces and Assam the administrative system has not developed sufficiently to render the appointments of financial commissioners necessary. The Board of Revenue in Madras, where there are no commissioners of divisions, consists of four members, and the boards in Bengal and the North-western Provinces and Oudh of two members each. There are two financial commissioners in the Punjab and one in Burma. Altogether there are 11 offices of this class. It is important to note that the members of the boards of revenue and the financial commissioners do not act in consultation, unless in any case they desire or are required by the Government to do so, but are each in charge of separate branches of the revenue administration.

Each Province, except Madras and a part of Assam, is divided into revenue and administrative "divisions," consisting of groups of three or more districts. At the head of each division there is a commissioner, who is subordinate in revenue matters to the Board of Revenue or financial commissioners, and in other matters directly to the Local Government or Administration, and to whom the executive district officers are subordinate in respect of their revenue, executive, police, and general work. There are 41 divisional commissioners in the Civil Service *cadre*—4 in Bombay, 9 in Lower Bengal, 9 in the North-western Provinces and Oudh, 6 in the Punjab, 8 in Burma, 4 in the Central Provinces, and 1 in Assam. In some of the non-Regulation Provinces these officers still exercise judicial powers as district and sessions judges, in which capacity they are, of course, subordinate to the High Court or Judicial Commissioner. But it is the policy of the Government of India to transfer such functions, as circumstances permit, to district (or divisional) and sessions judges, in accordance with the system which obtains in the Regulation Provinces. In the Punjab and Oudh this transfer has already been completed. In the Central Provinces considerable progress has been made in this direction, and proposals from the Chief Commissioner are now under consideration, to which only want of funds has prevented full effect from being given, for assimilating the system there in all respects to that prevailing in the Punjab.

5. Each division, or where there is no "division" the Province is divided into districts. From column 8 of the statement attached (Appendix I.) to this memorandum, it will be seen that there are 234 districts in British India. The average area of a district is somewhat over 4,000 square miles, and the average population somewhat below a million souls, or about the area and population of Norfolk and Northumberland combined. In Madras the average size is over 6,000 square miles and the average population $1\frac{1}{2}$ millions. In Bengal, while the average is about $1\frac{1}{2}$ millions, many districts contain a population of two to three millions. In the newly acquired and sparsely peopled tracts of Upper Burma, on the other hand, the lowest average population is reached—somewhat under 175,000 souls.

In one sense the two most important offices in the whole administration for which the Covenanted Service is recruited are the executive headship of a district and the district and sessions judgeship; for these offices respectively constitute, as it were, the pivots upon which the executive and judicial administrative systems work. The executive head of the district is called the district magistrate and collector in the Regulation Provinces, and in the non-Regulation Provinces the deputy Commissioner. He is responsible for the revenue, criminal, and general executive administration of the district; and all revenue and magisterial officers in the district, whether belonging to the Covenanted or Provincial or Subordinate Services, are subordinate to him in respect of their executive work. He has also certain powers of judicial control over subordinate magistrates, and appellate powers in certain minor criminal matters and cases. He is also ultimately responsible for the proper working of the police of his district, which, though under the direct control of its departmental head, called the district superintendent of police, is subject to his general supervision.

The district (or divisional—for in many cases he has charge of more than one district) and sessions judge not only discharges judicial and those of district or divisional and sessions judges, the duties as a judge, but is also the district administrative officer in the Civil Judicial Department, responsible for the proper working and discipline of all the civil courts within his district. Magisterial officers are only empowered to dispose of criminal cases within certain limits; and all serious criminal cases have to be committed for trial to the sessions court. Appeals from the criminal decisions of magistrates, except in the minor cases in which the district magistrate has jurisdiction, have also to go before the sessions judge. The district and sessions judge is thus the judicial superior of the district and other magistrates, and has, subject to the High Court, the ultimate control over the administration of civil and criminal justice. His position is one of greater administrative independence than that of the district magistrate; for the High Court has no intermediate authority for supervising the district and sessions judges such as the local government has in the commissioners of divisions who supervise the work of the district magistrates and collectors or deputy commissioners.

The above applies strictly to all the Regulation Provinces. In some of the non-Regulation Provinces the system is to some extent different: but it is not necessary here to describe the non-regulation systems; for, as already observed (paragraph 4 above), it is the established policy to assimilate them to the regulation system as rapidly as circumstances permit.

Before an officer can be competent to hold substantively the office of district magistrate or judge, it is necessary that he should have a large and solid experience of the people of the Province, of the land and revenue systems, and of the methods of administration in force. Such experience can only be acquired after years of active district service in subordinate posts; and therefore it is necessary that there should be a series of offices, inferior to a district headship or judgeship, in which young civilians can gain the requisite training and experience. But, apart from this necessity, there are many such offices in which it is essential that, as a rule, Europeans should be employed; for example, the charge of a sub-division where much English capital has been invested, and there are many Europeans engaged in the indigo, tea, or other industries; the charge of a frontier sub-division contiguous to savage hill-tribes; the post of senior assistant to the district magistrate or deputy commissioner, who should be competent at any moment to take over the duties of the latter if withdrawn or disabled. In many cases, however, the duties performed by junior civilians holding subordinate district posts are precisely similar to those performed by members of the Provincial Civil Service, except that the former, when they have reached a certain length of service, must always be fit and ready to take charge of more responsible duties.

The statement annexed as Appendix I. will show that there are included in the *cadre* of the Covenanted Service 234 executive district headships, one for each district; 111 district (or divisional) and sessions judgeships; and 277 judicial and executive posts (chiefly executive) inferior to the headship of a district.

6. But while these district officers respectively control the executive and judicial administration of their districts, this description is by no means exhaustive of their functions. In all grades of the service they come into close contact with the people of their districts, with native states, and with other departments of the public service—with some, such as police and jails, intimately; with others more remotely. Most undertakings of importance in this country, such as educational institutions, railways, canals, communications, and irrigation

The position of the chief district officers, executive and judicial, is of the greatest importance as a source of administrative strength to the Empire. The whole system of Government rests on the basis of this administrative and not of military strength.

works, are either directly carried on by, or are indirectly connected with, the Government. But whether an undertaking be a State or private one, it cannot avoid having frequent and close relations with the district officers. The executive head of the district is responsible for the supervision and direction of the local governing bodies which have been created in recent years in all Provinces of the Empire. Where troops are stationed, as in so many of the stations of Northern India, or when any military operations or expeditions are carried on, the military authorities look to him for co-operation and advice on all matters in which the assistance of the civil authorities is required. In backward and undeveloped Provinces the head of the district exercises in varying degrees a more or less direct control over many of the special departments.

In advanced districts the control is less. But everywhere the magistrate and collector, or deputy commissioner, is looked upon by other departments, by the people of the district, by native Chiefs and their subjects, and by frontier tribesmen, as representing the Government, and the district judge as the authority who is the judicial superior of the magistrate and controls the administration of justice, civil and criminal. They are in the details of administration the officers who, in the eyes of the people, constitute the Government, and on whose efficiency and influence the strength of British supremacy in India largely depends.

The above is equally applicable to offices superior to the headship of a district; the importance and responsibilities attaching to the former can hardly be less than those attaching to the latter. The supervision of the district executive work rests with the commissioners of divisions, and the direction of the policy with the higher executive officers; the control of the judicial work is with the high courts.

No adequate conception can be formed of the importance of the issue involved in the resolution of the House of Commons now under consideration unless these facts are clearly recognised. Under the system which has been established as the result of the experience of many generations, it is owing to the authority and influence of the district magistrate and judge, and also—less directly, but not in a less important degree—of the superior controlling staff, that British rule in India rests primarily on the basis of administrative and not of military strength. Under any other system that can be conceived as practicable an increase, and probably a large increase, to the European military force could not be avoided.

7. There still remain to be noticed two groups of covenanted offices not mentioned above. It will also be convenient to explain here briefly the mode in which civilians are selected for promotion to higher offices.

The first group includes five secretaries in different departments of the Government of India, who occupy a position similar to that of a Permanent Under Secretary of State at home; and seven deputy and under secretaries. There are also 48 secretaries and junior and under-secretaries to local governments and administrations, secretaries to the boards of revenue or financial commissioners, and private secretaries to governors and lieutenant-governors; and six registrars to high courts or judicial commissioners. There are thus 66 offices in all of this group. Appointments to them are made by selection from among officers of the standing required who are considered to possess the necessary qualifications, which imply an intimate acquaintance with the people and the business of administration, and experience of work in various capacities, executive and judicial.

Of the group of 49 offices classed as "general," the most important in their relations to the people are those held by officers of the Land Records and Settlement Departments, who deal with questions relating to land and to the agricultural and economic condition of the people. To these officers is entrusted the settlement of the land revenue demand in temporarily settled Provinces—an operation of the utmost importance to the people and to the Government, and demanding the most unwearied industry, an intimate knowledge of and sympathy with the agricultural population, and strong administrative capacity. There are 32 officers of this class, of whom 10 (at most) have their head-quarters at the seats of the local governments though they are required to spend a considerable portion of the year on tour in the interior, and the other 22 are employed in the districts. The rest of this group consists of certain miscellaneous offices, such as those of chairman of the municipalities at presidency towns or the advisers of the local governments in special matters. To offices in this group also appointments are made by the special selection of officers possessing the peculiar qualifications required.

Appointments to offices superior to the headship of a district (paragraph 4 above) are invariably made by special selection.

Appointments to offices superior to the headship of a district, and to posts outside the regular line of district charges, are made entirely by selection. No covenanted civilian, whatever his seniority, has a claim to them apart from

selection for merit and capacity.

To the headship of a district on the executive or judicial side appointments are made

The principle of selection is also applied to headships of districts, executive or judicial. In inferior posts promotion is ordinarily made according to seniority.

by seniority subject to fitness and approved service. In former days it was too much the practice to promote officers in the ordinary course according to seniority without reference to their fitness for such charges. This defect was pointed out by the Famine Commission in 1878–80, and the views of that Commission were supported by the Public Service Commission in 1886–88. The Government of India have recently (1890) issued instructions that the principle of selection shall be applied, and that no officer shall be appointed to the charge of a district unless he has given distinct evidence of his capacity for such office. To posts inferior to a district charge, which form the training ground for young civilians, appointments are ordinarily made by seniority.

It will be seen from what has been said above that the large majority of covenanted

More than four-fifths of the officers holding covenanted charges are engaged in the actual details of district administration.

offices are held by officers engaged in the conduct or supervision of *district* work in the interior of Provinces; 41 commissioners of divisions, 111 judicial heads of districts or divisions, 234 executive heads of districts, 277 assistants, and 32 settlement officers—695 in all, or 84 per cent. of the total number, exclusive of the leave reserve and officers merely in training (paragraph 9)—are so employed. The balance consists on the executive side of officers conducting or assisting in the government of the different Provinces, and on the judicial side of officers occupying seats in the highest court of law in the Province and controlling the judicial administration.

8. So far the service which is being dealt with has been spoken of as the “Covenanted Service,” and the posts which its members hold as

The classes of officers who may be appointed to covenanted offices are:

In the Regulation Provinces, (1) covenanted civilians; (2) statutory (native) civilians; (3) selected (native) Provincial Service officers.

In non-Regulation Provinces, (4) military officers, and in exceptional cases (5) uncovenanted European officers may also be appointed.

“covenanted offices.” But covenanted civilians appointed after competition in England do not hold all these offices. Under 24 & 25 Vict. c. 54. (which will be called hereafter the Statute of 1861), they were the only class of officers eligible for appointment to the executive and judicial offices entered in the schedule to that Act (called “scheduled offices”) in the Regulation Provinces (paragraph 14); but in the non-Regulation Provinces this restriction did not legally apply, and in practice was not so strictly carried out. In the frontier Provinces of the Punjab, Burma, and Assam it is still considered desirable that a proportion of

the covenanted offices should be held by military officers, who are selected from the Indian Staff Corps. Formerly they were appointed in a larger proportion, and uncovenanted officers, not members of the Covenanted Service, used also to be recruited for non-Regulation Provinces. But since 1876 the military proportion has been fixed at one-fourth and the recruitment of uncovenanted officers has been discontinued, save in very exceptional circumstances (paragraph 39). When Upper Burma was taken over, for instance, it became necessary to recruit an extra staff of Europeans, and, as far as possible, of officers with some experience of the country, and a large number of uncovenanted officers were (with the sanction of the Secretary of State) admitted to covenanted offices in that Province.

The reservation of scheduled posts to covenanted civilians made by the Statute of 1861 was modified by 33 Vict. c. 3. s. 6 (which will be

The appointment of natives of India to any covenanted offices was first permitted by the Statute of 1870:

called the Statute of 1870), which permitted “natives of India,” not being members of the Covenanted Service, to be appointed to such posts (paragraph 15). Under the system introduced under the latter Statute in 1879, natives of India, called “Statutory Civilians,” were appointed to covenanted offices (paragraph 22). This system continued in force till it was superseded last year by the Provincial Service scheme, which was also framed under the Statute of 1870. Under this scheme a list is drawn up of certain covenanted offices in the different Provinces, called “listed” offices or posts, to which members of the Provincial Civil Service may be appointed (paragraph 30). The Provincial Service officers holding these listed posts are not, however, as the other classes of officers mentioned above, set apart exclusively for service in covenanted offices; their proper place is in the Provincial Service, but, subject to certain prescribed conditions, a member of that service may be selected to hold these covenanted offices permanently or temporarily.

9. The figures given in the statement attached as Appendix I. show only the actual posts or sanctioned *covenanted charges*. The number of officers required to fill these charges continuously must necessarily be in excess of the number of posts. Their number must be kept at a strength which will provide a sufficient reserve of officers to fill vacancies caused by absences on leave; and it must take a recruit just out from home, or just appointed in India for the first time to civil

employ, some time before he has acquired sufficient experience to hold even one of the minor sanctioned charges. It is generally assumed that for the first two years of his service an officer is merely in a stage of training and not yet fit to hold any sanctioned covenanted charge. Appendix II. shows the actual distribution and employment on the 1st July 1893 of officers of all the classes, other than natives of India appointed under the Statute of 1870, filling covenanted offices. The total number of such officers was 1,064, made up as follows:—Covenanted civilians, 898; military officers, 104; uncovenanted officers, 62. Excluding the officers actually employed in the political and special services and departments, the total number was 993, of whom 205 or 21 per cent. were absent on leave, 99 or 10 per cent. were merely in training, and only 689 were available for holding sanctioned executive and judicial offices. Taking covenanted civilians appointed in England separately, their total number in the Executive and Judicial Departments was 837, of whom 168 were on leave and 87 merely in the stage of training. On the 1st July 1893, therefore, the total number of covenanted civilians actually available for holding sanctioned executive and judicial charges was 582 only.

It should be explained that the hot season, April to October, is the time when most leave is taken by European officers. In the cold weather the proportion of absentees is less. The figures for the 1st July may be taken as a fair average for the seven months mentioned above.

II.—THE PROVINCIAL AND SUBORDINATE CIVIL SERVICES.

10. The Provincial and Subordinate Civil Services, which form the intermediate and

The Provincial and Subordinate Services are each much stronger numerically than the Covenanted Service. lower branches of the Executive and Judicial Departments, are not recruited with such exactitude as the classes of officers intended for covenanted posts. Their *cadre* (*i.e.*, the number and scale of sanctioned offices) is not so precisely fixed, and appointments are made as occasion arises by the local governments, subject to the control of the Government of India as to the number and grading of appointments carrying a higher salary than Rx.* 300 a year. On the 1st July 1893 there were 1,827 officers in the Provincial Civil Services, of whom 1,030 were in the Executive (Magisterial, Revenue, and General) and 797 in the Civil Judicial Branch. There were also on the same date 1,908 members of the Subordinate Civil Service exercising revenue, criminal, or civil judicial powers. These figures relate only to the organised services in the Executive and Judicial Departments, and exclude not only many smaller branches of those departments, but also the numerous clerical and ministerial establishments of the different Government offices, which are almost entirely manned by natives of India. It will be evident from a comparison of the strength of the Covenanted Service with that of the Provincial and Subordinate Services that the bulk of the administrative and judicial business of the country is transacted by the two latter services (almost entirely manned by natives of India—paragraph 39 below), the Covenanted Service being restricted to the smallest numbers necessary for the direction of the administration, for district supervision, and for dealing with the many points in which the Executive and Judicial Departments come in contact with the people, with local governing bodies, with the Military or Political Services, or with the other civil departments.

11. As this memorandum is not now concerned with these two services except so

It is the policy of Government to restrict the Covenanted Service to the smallest possible number of posts, and to transfer posts or add new executive and judicial posts, when created, to the Provincial Civil Service.

far as they affect the constitution of the Covenanted Service, it will not be necessary to enter into detail regarding the offices attached to them. A general account of them is given in paragraphs 46 to 55 of the Report of the Public Service Commission. It is only necessary to add that it has long been the policy of the Government of India to restrict the Covenanted Civil Service to the smallest possible numbers,

and as administration advances in complexity and additional posts have to be created,

*Rx. = 10 rupees.

to amalgamate such posts with the Provincial Service. There are two methods in which offices are transferred from the Covenanted to the Provincial Service. The first method is by simply excluding the office from the *cadre* of the former service. For example, the important office of Inspector-General of Registration in Bengal was omitted from the *cadre* fixed in 1892 as being a post for which it was no longer absolutely necessary that officers should be recruited in England. It was thus made available either to members of the special Registration Department or to members of the Provincial Civil Service by simple exclusion from the *cadre* of the Covenanted Service. From the nature of the case, however, very few offices can be removed from the Covenanted Service in this way, as its *cadre* has for many years past been kept at a minimum. The second method is by "listing," in the manner described in paragraph 8 above, offices in the Covenanted Service as posts to which Provincial Service officers may be appointed. Last year 93 such offices were listed, of which eight belong to the group of secretariat offices and the rest to the groups of district or general offices.

Now it will readily be understood that the business of administration has much increased and that many new posts in the Executive and Judicial Departments have had to be created since 1881. This is illustrated by the fact that though the Covenanted Service has remained almost stationary since 1881, the numbers of officers in the Provincial and Subordinate Services have increased more than 30 and 39 per cent. In 1881 the number of sanctioned covenanted charges, including the posts in the Political and Special Services, was 810 (inclusive of Lower Burma). In 1893 it was 898, and much of this increase is due to the acquisition in 1886 of Upper Burma. Excluding Burma the figures were 765 in 1881 and 808 in 1893. In 1881 the total number of officers in the grades corresponding to the Provincial Service was 1,405, and in grades corresponding to the Subordinate Service 1,368. In 1893 the total number of officers in the Provincial Service was 1,827, and in the Subordinate Service 1,908. Moreover, since 1880, about one-sixth of the annual recruitment for covenanted offices (excluding the recruitment for Burma) has been set apart for natives of India. It will thus be seen that every endeavour is made to promote the employment of natives of India by keeping down to the lowest possible limits the strength of the Covenanted Service recruited in England.

12. As an example of this the figures for one Province may be examined in detail.

For instance, in Bengal there were only 125 European covenanted civilians actually employed on 1st July 1893, exclusive of men merely in training, of whom only 99 (+6 military and uncovenanted officers) were employed in the districts.

It will be convenient to select the lower Provinces of Bengal for this purpose, as that Province is often referred to as one peculiarly adapted for the extension of native agency in the administration. On the 1st July 1893 there were 732 officers in the Provincial Civil Service of these Provinces—368 in the Magisterial and Revenue, and 364 in the Civil Judicial branches. In the Subordinate Civil Service there were 180 officers. On the same date there were 176 covenanted civilians borne on the lists of these Provinces as serving in executive and judicial offices (statutory civilians and covenanted officers employed in the special departments, being excluded). Of these, 32 were shown as employed at the head-quarters of the Local Government (*e.g.*, in the High Court, Board of Revenue, secretariats, &c.), and 144, including commissioners of divisions, in the districts; six of the former and 25 of the latter were absent on leave. Of the number (119) actually employed in the districts, 15 were officers of less than two years' service who had not yet emerged from the stage of training. Deducting these, the result is 104 civilians capable of filling sanctioned charges, five of whom were Bengali gentlemen. There were thus 99 European covenanted civilians, to whom must be added six European military and uncovenanted officers holding covenanted charges in the non-regulation districts, or 105 European officers in all in the Covenanted Service actually available for the conduct and supervision of the details of the executive and judicial work of 46 districts, the aggregate area of which is 151,543 square miles and the population 71,346,987. Many of these, too, were junior officers of only a few years' service. These facts will make it clear that the European element in the executive and judicial branches of the Covenanted Service in these Provinces is at the lowest limit at which it is possible to keep it. It is true that that the Covenanted Service in Bengal is at present about 28 short of its full sanctioned strength; but even if these be added, the European element would still be at a minimum.

13. Speaking generally, the salaries of officers in the Subordinate Civil Service range from Rx. 120 to Rx. 300 a year. In the Provincial Service they range from Rx. 240 to Rx. 960 in most provinces and Rx. 1,200 in Bengal. Several of the covenanted offices; however, which have been listed as open to the Provincial Service carry salaries of over Rx. 1,000 a year, the highest being Rx. 2,400. Doubtless these salaries are on a lower scale than those granted to covenanted civilians; but the remuneration required to attract persons in England qualified, or likely to become qualified, to hold the highest offices must necessarily be greater than that which need be offered in India. Considering the differences in habits and modes of life between Europeans and natives, these salaries are sufficiently liberal to attract the best educated natives of India to the service, and they are, as a rule, considerably higher than those allotted to corresponding administrative and judicial officials serving in their own country or on the Continent of Europe. The Lieutenant-Governor of Bengal has recently reported that he has no difficulty in recruiting Honours graduates of the Calcutta University for employment even in the Subordinate Service at the present salaries.

II.—LEGISLATION AFFECTING THE COVENANTED CIVIL SERVICE.

14. As regards the parliamentary legislation regulating appointments to covenanted offices, the first Act which need be noticed is the Statute of 1793 (33 Geo. III. c. 52. s. 57.), which required all appointments in the civil branch of the East Indian Company's service under the rank of Member of Council to be made from amongst the covenanted civil servants of the company. In practice, however, it had been found necessary or desirable to appoint persons other than covenanted civil servants. Consequently the Statute of 1861 (24 & 25 Vict. c. 54.) was passed validating such appointments. At the same time the Statute declared that the offices entered in its schedule, and therefore known as "scheduled" offices, should in future be reserved for the Covenanted Service. These offices are, roughly speaking, the district judicial and executive offices (which have been described above), in the Regulation Provinces, the secretariat appointments, and a few posts in the Accounts, Opium, Salt, and Customs Departments. It should be observed that the scheduled offices are, with one or two exceptions, almost entirely confined to the Regulation Provinces; but in order to secure efficient administration it has been found necessary to apply the same system of recruitment and appointment to the non-Regulation Provinces. The only difference at present between the two classes of Provinces is that, as pointed out above (paragraph 8), a proportion of the recruitment for certain non-Regulation Provinces is reserved for military officers.

15. The Statute of 1861, while reserving the scheduled posts for the Covenanted Service, provided an exceptional procedure—sections 3 and 4—under which any person of at least seven years' residence in India might be appointed to one of these posts, subject to report to and confirmation by the Secretary of State. This exceptional procedure was, however, deemed insufficient to meet the claims of natives of India, and comparatively few appointments were made under it. Consequently the Statute of 1870 (33 Vict. c. 3. s. 6) was passed permitting the authorities in India, subject to rules made by the Governor General in Council and sanctioned by the Secretary of State in Council, to appoint any natives of India (but no other persons), even though they might not have been admitted as members of the Covenanted Civil Service, to offices scheduled as reserved to that service by the Statute of 1861. For the purposes of the Statute the words "natives of India" were declared to mean persons "born and domiciled within the dominions of Her Majesty in India of parents habitually resident in India and not established there for temporary purposes only;" and it is in this sense that the term is ordinarily used in official papers, though it is needless to say that the proportion of persons other than those of purely Indian extraction who come within this definition is extremely small.

There are thus two chief Statutes; that of 1861 reserving the "scheduled" offices to the Covenanted Civil Service, which is open to all Her Majesty's subjects, irrespective of race, birth-place, colour, or creed; and that of 1870 making a special exemption in favour of natives of India only.

IV.—MEASURES TAKEN FOR EXTENDING THE EMPLOYMENT OF NATIVES OF INDIA IN COVENANTED OFFICES.

(i.) *Up to the Appointment of the Public Service Commission.*

16. The action taken under the Act of 1870 for extending the employment of natives of India in covenanted offices has now to be described.

The action taken under the Statute of 1870 in appointing natives of India to covenanted offices is described briefly in Enclosure No. 1 to the Despatch. What follows here is a more detailed account.

As already stated, the Government of India have for more than two decades been anxiously considering the methods by which the services of natives might be utilised in the public administration, especially in the higher judicial and executive offices, as far as possible. The history of these measures is stated briefly in the Government of

India's letter of the 5th August last to local governments (Enclosure No. 1 to the Despatch); but it is desirable now to go into the subject in full detail. As explained in that letter, it is unnecessary for the present purpose to go back to a period much before 1870, because the entire position was changed by the Act of that year, which for the first time authorised the appointment in India of natives of India to offices reserved by law for the Covenanted Service without requiring them to enter that service in the regular way.

In the discussions in the House of Commons and elsewhere frequent mention has

The declarations in 3 & 4 Will. IV. c. 85. s. 87. and the Queen's Proclamation of 1858, how to be understood. The Act of 1870 was the first measure passed expressly with a view to facilitate the admission of natives of India to covenanted offices and to obviate the difficulties imposed by the Statute of 1858. Under the Statute of 1870 the rules of 1879 were framed; and with them the situation was entirely changed.

been made of the provisions of section 87 of the Statute 3 & 4 Will. IV. c. 85. and of the declaration embodied in Her Majesty the Queen's Proclamation of November 1st, 1858. The first of these enacted "that no native of the said territories, nor any natural-born subject of Her Majesty resident therein, shall, by reason only of his religion, place of birth, descent, colour, or any of them, be disabled from holding any place, office, or employment under the said company." This provision, as is evident from its language, conveys no *pledge* of employment to any class, but merely declares that no person shall be subject to a disability on account of the

matters stated. As observed by the Court of Directors, its object was "not to ascertain qualification but to remove disqualification." The same Statute (sections 103-107) limited the supply of "the vacancies in the civil establishments in India" to candidates nominated for admission to the East India Company's College at Haileybury; and at that time it need hardly be said that under this method of "providing for the due qualification of persons to be employed in the Civil Service of the company" the admission of natives of India to that service could, under any conceivable circumstances, scarcely have been contemplated. Her Majesty's Proclamation of 1858, while announcing Her Royal will and pleasure that, "*so far as may be*, Her subjects, of whatever race and creed, be freely and impartially admitted to offices in Her service, the duties of which they may be qualified, by their education, ability, and integrity duly to discharge," similarly limited, in the words italicised, the admission of natives of India to such offices by the paramount necessities of the Empire. The Statute of the same year (21 & 22 Vict. c. 106. s. 32), under which appointments to the Indian Civil Service are still regulated, evidently contemplated such appointments being made according to the results of an examination conducted in London under the superintendence of the Civil Service Commissioners. And it was in order to give effect to the Proclamation of 1858, in such manner as to counteract *so far as might be* the difficulties imposed by the Statute of 1858 on natives of India in coming to London to be examined, that the Statute of 1870 was passed into law. This Statute is restricted in its operation to natives of India. While other natural-born subjects of Her Majesty can gain admission to the service only by the door provided by the Act of 1858, natives of India need not have recourse to that

mode of entrance, but can be admitted—on proof of “their education, ability, and integrity”—by the procedure laid down in the Act of 1870. But the qualification expressed in the Proclamation of 1858—“so far as may be”—still holds good; and although the Government of India for the last 20 years have assiduously endeavoured to promote the entrance into the higher offices of the Indian Public Service of duly qualified natives, the necessities of our position in the country continue to limit the possibilities of such admission.

In the summary which follows, two subjects which are closely connected will be referred to: (1) the rules framed under the Act of 1870 and their results; and (2) the applications made from time to time for the holding of competitive examinations in India for admission to the Covenanted Service, and the orders passed on them. It will be observed that an important point in most of the discussions was the proportion which should be established between Europeans and natives in covenanted offices.

17. The memorials submitted by the Bombay Association and by the British Indian Association in 1868 praying for an examination in India

The application of the British Indian Association in 1868 for an examination in India was opposed by Lord Lawrence's Government and rejected by the Secretary of State. The Statute of 1870 was then under consideration.

are described in paragraph 15 of the letter of 5th August 1893 (Enclosure No. 1 to the Despatch). The proposal was opposed by the Government of Lord Lawrence, and the Secretary of State (Sir Stafford Northcote), in his Despatch of the 14th October 1868, rejected it and said:—

“On principle, too, I am of opinion that it is desirable that those who are to administer the Government of the British possessions in India should, as a general rule, have had the advantage of passing some time in this country and making themselves practically acquainted with the habits, character, and institutions of the people of England. Looking, as I am bound to do, to the welfare of the whole of Her Majesty's Indian subjects—of those who are to be governed as well as those who may claim a share in the work of administration—I consider that such an education of the civil servants who are ultimately to fill the highest situations is important. I do not regard appointments to the Civil Service as simply so many prizes for which the candidates, whether native or European, are to compete. I rather look upon the selection of those officers who are ultimately to discharge duties of great importance to India as the exercise of a trust on the part of the Supreme Government for the general benefit of its subjects; and I consider that we ought to judge of the merits of any particular system of selection, not with reference to its affording greater or less facility to this or the other class of candidates, but with reference to its providing or failing to provide suitable public servants.”

Lord Lawrence's Government then proposed a scholarship scheme to assist natives of India to compete in England. It was negatived by the Secretary of State.

18. As the result of this correspondence the Government of Lord Lawrence proposed the system of scholarships described in paragraph 3 of that letter, which was negatived by the Duke of Argyll in his Despatch, No. 3, dated the 8th April 1869.

The Duke of Argyll's remarks have been quoted at length in the letter referred to, because some of the principles laid down in them have been affirmed by subsequent experience in a remarkable manner. In the first place, they show that it was because the competitive system was considered unsuitable to natives of India that the Act of 1870 authorised the appointment of natives “of proved merit and ability” to covenanted offices. Quite recently most of the local governments and administrations have declared it to be highly inexpedient to apply the competitive system generally to recruitment even for the Provincial Service (paragraph

Three principles laid down by the Duke of Argyll in 1869—(1) that the competitive system is unsuitable for natives of India; (2) that they should be promoted according to tried ability to covenanted offices; and (3) that each Province and race should be treated by itself—have been entirely borne out by subsequent experience.

45 *infra*). Secondly, the principle that the best method of doing justice to the claims of natives of India was “a more free employment of them in the Uncovenanted Service, and promotion according to tried ability from that service to the Covenanted Service,” was supported unanimously by the Public Service Commission in 1887 (paragraphs 26 and 29). Thirdly, the principle that each Province should be treated by itself was also supported by that body (paragraph 29); and the necessity for treating each race and class within a Province by itself has also been forcibly brought home by the results of the competitive examination for admission to the Bengal Provincial Service (paragraph 46).

19. In 1873 the Government of India prepared the first set of rules under the Act

The rules framed in 1873 under the Statute of 1870 were disallowed by the Secretary of State, and the Rules of 1875 proved unsuccessful in their working.

of 1870. These rules laid it down as a condition of admission to covenanted offices that the candidate should be a person of "proved merit and ability," who had undergone a term of at least five years' service in the higher ranks of the (then) Subordinate Judicial and Executive Services, or, in the case of judicial offices, had practised as a barrister, advocate, or certified pleader for not less than 10 years in a court not lower than that of a district or sessions judge. These rules were submitted to and disallowed by the Secretary of State in 1874, after taking the opinion of the Law Officers of the Crown, on the ground that they placed too narrow a construction on the Statute as excluding, for instance, persons of merit and ability proved otherwise than in Government service, or in a learned profession otherwise than in the method stated. A revised set of rules was accordingly framed by Lord Northbrook's Government in 1875 and sanctioned by the Marquis of Salisbury (then Secretary of State); but they proved to be unworkable, as arrangements had not been made on subsidiary matters for giving effect to them. No definite proportion had been established between natives and Europeans, and the recruitment in England had not been reduced to make room for Indian recruits.

Lord Lytton's Government in 1878 proposed the formation of a close Native Civil Service, to which about 15 per cent. of the covenanted posts were to be transferred. This was negatived by the Secretary of State.

20. The scheme proposed by Lord Lytton's Government in 1878, for the formation of a separate superior Native Civil Service, to which about 15 per cent. of the covenanted posts in most Provinces were to be declared open, is described in paragraph 4 of the Government of India's letter of the 5th August 1893.

21. The memorial presented by the British Indian Association in 1876 for a competitive examination in India is referred to in paragraph

In 1876 the British Indian Association repeated their request of 1868. This was again negatived on the ground that action was being taken under the Statute of 1870.

16 of the same letter. In their memorial the petitioners said: "In directing that the competitive examination for the Indian Civil Service shall be held in India for native candidates in India, it will, your memorialists venture to think, be necessary to declare a definite share of covenanted appointments to be thrown open to Indian competition every year, so as to prevent an undue influx of the native element into the service in the present experimental condition of the measure. Your Lordship from your position and knowledge of the requirements of the service will be best able to decide the proportion to be assigned to Indian candidates." Lord Cranbrook, in his reply of the 14th November 1878, while rejecting the memorial, referred to the rules then under consideration and issued in 1879 as giving practical effect to this portion of the memorialists' requests.

22. The Statutory Rules of 1879, which were sanctioned by the Secretary of State

The Statutory Rules of 1879 provided for the recruitment of natives of India for covenanted posts up to a maximum of one-sixth of the annual recruitment.

in Council and brought into force in that year, are described in paragraph 5 of that letter. They provided that the authorities in India might appoint natives of India in this country to posts in the Covenanted Civil Service up to a maximum limit of one-fifth of the number of covenanted civilians appointed in England in each year by the Secretary of State; in other words, that a proportion of the recruitment for posts in the Covenanted Service up to a maximum of one-sixth in each year—exclusive of (1) military recruits for frontier non-regulation commissions, and (2) uncovenanted officers in the rare cases in which they were appointed—should be natives of India appointed in this country under the Statute of 1870. For the first three years of the system, however, the rules allowed the proportion of one-sixth to be exceeded by two in each year.

These Statutory Rules remained in force until they were superseded last year by

the Provincial Service Scheme. Until the system was condemned by the Public Service Commission (1886-87) the maximum number of native statutory civilians was appointed each year, and the average was about six a year.

the Public Service Commission (1886-87) the maximum number of native recruits (called "statutory civilians") who could have been appointed under the rules was actually appointed. It averaged a little over six a year. The annual maximum was not a fixed number of 7·56, but a fluctuating number, dependent on the actual recruitment in England. The figure 7·56, given in paragraph 45 of the Public Service Commission's Report, is, as there explained,

merely an estimate. If, for instance, 29 recruits were appointed in England, as in 1883, the maximum number who could be appointed in India would be five. Altogether 69 natives of India were appointed as statutory civilians up to 1889-90, when this system was discontinued upon the recommendation of the Public Service Commission (paragraph 26). After 1886-87 the maximum number was not appointed, but the position had then entirely changed; not only had the system been condemned, but extra recruitment of European officers had been rendered necessary by the taking over of Upper Burma. The average, however, for the whole period during which statutory civilians were recruited, 1879 to 1890, was a little under six a year.

23. In 1883 the memorials described in paragraph 17 of the letter of the 5th August 1893 were rejected by the Secretary of State (Lord Kimberley), who remarked that, in accordance with the Rules of 1879 one-sixth of the annual recruitment was set apart for natives of India, and that "the proportion of one-sixth was certainly as high as the Government felt justified in establishing."

24. In 1884 there were some further memorials, mentioned in paragraph 18 of the letter of 5th August 1893, and Lord Ripon's Government proposed that 18 per cent. of the annual recruitment should be reserved for natives of India.

These proposals were rejected by the Secretary of State. 1885, the Secretary of State (Lord Kimberley) negatived these proposals, and observed as follows:—

"It is undoubtedly true that several very high authorities have entertained serious objections to holding an open competitive examination in India, even in the subjects hitherto prescribed, partly from political considerations, and partly from some misgiving as to the view which the Indian population might take of this method of selection when it came to be understood. Among these authorities was the late Lord Lawrence, during whose government a strong desire had been expressed by many of the educated natives that copies of the papers set in London should be sent out under seal to India, so that the competitive examination might be held simultaneously both there and in England. This movement led to a correspondence between the Government of India and the Secretary of State in 1868 and 1869, which ended in the submission of a measure of relief to Parliament. This measure became law as Statute 33 Vict. c. 3, s. 6, and its enactment was announced by the Duke of Argyll to the Government of India in the following words: 'I have now to inform your Excellency in Council that a Bill has been passed by Parliament during the present session, the provisions of which will effectually carry out my desire that natives of India should be appointed to such high offices under Government as they may be fitted for by their qualifications.' The Act passed in 1870 is in fact the remedy provided by Parliament itself for any inconvenience or injustice which the natives of India might be shown by experience to suffer through the necessary adaptation of the examination in London to the circumstances of home-born rather than of Indian competitors for the Civil Service."

25. When the Statutory system of 1879 was introduced it was contemplated that appointments under the rules should generally be made

The Statutory system of 1879 failed because the young men appointed under it were untried persons whose merit and ability had not been tested in previous service.

from among young men of good family and high social position to whom the offices open to them in the Sub-ordinate, Executive, and Judicial Services had not proved a sufficient inducement to come forward for employment.

The appointment of persons who had already proved their merit and ability in Government service or in the practice of a profession was permitted, but it was declared as the general rule that they should only be appointed in cases of exceptional distinction. During the earlier years in which the system was in force the tendency was to appoint chiefly young men of the former class. This method was found to be unsuccessful, and, in the words of the Public Service Commission's Report, "in 1884 it was decided once more to reopen the question, evidence having been adduced which satisfied the Government of India that the plan of nomination was held by many authorities to fail in securing sufficient guarantees of ability and education in persons appointed under the rules. Although it was considered that in most cases the nominations actually made had been fairly satisfactory, it was generally felt that no antecedent guarantee existed of the fitness of the person selected." In the later years of the system, *i.e.*, from 1885 to 1889,

there was an increased tendency to appoint under the Rules of 1879 men of more advanced age who had already proved their fitness for promotion to covenanted offices by good service in the subordinate branches. In 1886 Lord Dufferin's Government submitted certain proposals to the Secretary of State for improving the working of these rules; and the result was that a Commission, called the Public Service Commission, was appointed at the end of that year to inquire into the constitution and working of the Covenanted Civil Service and the (then) Subordinate

Judicial and Executive Services, and to suggest a permanent scheme for the employment of natives of India in the offices of the superior service throughout India (excluding Burma).

By later instructions the Commission were also requested to examine the constitution of, and conditions of appointment to and service in, most of the special services and departments; and to make recommendations with regard to each. But their recommendations regarding these special departments need not be further referred to in this memorandum, as the question now under consideration relates solely to the Executive and Judicial Services. Each of the other departments was separately dealt with by the Commission, and orders have been passed or the recommendations of the Commission have been noted for consideration and action, when the time comes, separately with regard to each. In these departments the division of appointments in each case between covenanted civilians and others and between Europeans and natives is also, as already explained (paragraph 2), settled on a separate consideration of the different necessities and requirements of each department.

(ii.) *The Public Service Commission and their Recommendations.*

26. The Public Service Commission was a thoroughly representative body. Among its 14 members (exclusive of the president) there were six native gentlemen representing the different provinces, of whom four were Hindus and two Muhammadans,* while two members were domiciled Eurasians. The Commission found that the system under which natives of India had been appointed to covenanted offices under the Statute of 1870 had not worked satisfactorily; and they recognised and adopted the principle, referred to in the last paragraph, that men of proved merit and ability in the subordinate ranks of executive and judicial employ should be appointed to covenanted offices. In their Report, dated the 23rd December 1887, they unanimously recommended—(1) that the system

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Raja Udai Pertab Singh, C.S.I.,
of Bhinga, Oudh.

The Honourable Sir Sayyid Ahmad, Khan Bahadur, K.C.S.I.

The Honourable Kazi Shahá-buddin, Khan Bahadur, C.I.E.

M. R. Ry. Salem Rama Swami Mudaliyar, B.L.

Rao Bahadur Krishnaji Lakshman Nulkar.

of appointing statutory civilians under the Rules of 1879 should be abolished; (2) that a "Provincial Civil Service" should be constituted from the higher ranks of the (then) Subordinate Executive and Judicial Services; and (3) that about one-sixth of the covenanted executive and judicial charges, excluding the proportion reserved for military officers, should be removed from the *cadre* of the Covenanted Civil Service and declared open as a permanent arrangement to members of the Provincial Service. The Commission estimated (paragraph 77 of their Report) that the number of offices which would be thrown open to the Provincial Service under their recommendations would be about 108. But it must be remembered that they distinctly recognised (paragraph 77, page 74 of their Report) that certain of these appointments, *e.g.*, memberships of the Board of Revenue, commissionerships, and secretariat posts, could not be absolutely transferred to that service; all that their recommendation amounted to in respect of these appointments was that members of the Provincial Service should be declared eligible for them if selected by the local governments.

27. In order to give effect to their scheme the Commission recommended resort to parliamentary legislation. But before describing in detail the legislation which they proposed, it is necessary to notice two further important recommendations which they made. These were (1) that section 6 of the Statute of 1870, empowering the governments in India to appoint any native of India *as such*, to a reserved post, should be repealed, and (2) that the executive orders passed by Lord Lytton's

Two of their recommendations were that section 6 of Statute of 1870 should be repealed; and that the order of 1879 restricting the appointment of Europeans to the Provincial Service should be cancelled.

Government in 1879 (and described in paragraph 39 below), prohibiting the appointment of Europeans to the Executive and Judicial Departments without the special sanction of the Government of India or the Secretary of State, should be rescinded. These recommendations were based on what the Commission considered to be "the cardinal principle of equality of treatment for all classes of Her Majesty's subjects." In the opinion of the Commission, to quote their words, "no proposal can be supported as sound in itself or likely to be a final solution of the problem embraced in the present inquiry which involves a departure from the principle enacted in section 87 of the Statute 3 & 4 Will. IV. c. 85. or from the policy set forth in Her Majesty's Proclamation of 1858." Section 6 of the Statute of 1870, in so far as it made a special concession in favour of natives of India only, and the orders of 1879, in so far as they imposed a restriction on the appointment of Europeans as such, were in the opinion of the Commission inconsistent with section 87 of the Statute quoted, which laid down that "no native of the said territories (India) nor any natural-born subject of Her Majesty resident therein, shall, by reason only of his religion, place of birth, descent, colour, or any of them, be disabled from holding any place, office, or employment under the said (East India) Company," and with the Queen's Proclamation, which declared that "it is our further will that, as far as may be, our subjects of whatever race or creed be freely and impartially admitted to offices in our service, the duties of which they may be qualified by their education, ability, and integrity duly to discharge." The effect of these recommendations of the Public Service Commission would have been that the Provincial Civil Service would have been open to Europeans as well as to natives of India, subject to the condition of three years' recent residence in the Province and a competent knowledge of the vernacular languages, and that consequently the higher covenanted posts transferred from the Covenanted Service to the Provincial Service would also have been open to them.

28. The repeal of section 6 of the Statute of 1870 would have necessitated other parliamentary legislation; for the Governments in India would no longer have had power to appoint natives of India or members of the Provincial Service to offices reserved for the Covenanted Service by the Statute of 1861, that is to say, to any of the higher executive and judicial offices in the Regulation Provinces (paragraphs 14 and 15 *supra*). In the non-Regulation Provinces they would have had this power, for the Statute of 1861 did not strictly apply to them. The legislation which the Commission proposed was—

- (1.) The extension of the Statute of 1861 to non-Regulation Provinces.
- (2.) The exclusion from the schedule to that Statute of a proportion of each class of executive and judicial offices (other than posts reserved for military officers).

The effect of (1) would have been to extend to non-Regulation Provinces the reservation of executive and judicial appointments made by the Statute of 1861 in favour of covenanted civilians in the Regulation Provinces; the effect of (2) to leave a power to the Government to appoint persons other than covenanted civilians to each class of appointments up to the proportion specified.

The above proposals were intended to meet ordinary requirements so far as they could be foreseen and provided for at the time. To meet rare and exceptional cases, however, the Commission proposed that the Government of India should retain a power similar to, but somewhat wider than, that conferred by sections 3 and 4 of the Statute of 1861 to make special appointments to "scheduled" offices "on account of exceptional merit and ability" proved in the public service, or, in the case of judicial offices, in the practice of the legal profession, as well as "under the special circumstances of the case." This power, they observed, "should for obvious reasons be exercised very sparingly."

Moreover, in order to adapt their scheme to future requirements too far off to be foreseen and provided for at the time, they proposed that a provision should be inserted in the Statute of 1861 enabling the Secretary of State in Council, with the concurrence of the majority of the members, and subject to the control of Parliament, "to remove appointments or classes of appointments from the schedule or to include them in the schedule, as may seem desirable from time to time."

It is to be observed that Lord Dufferin's Government did not support the last two proposals mentioned above.

The effect of the Commission's main recommendations would have been to declare once for all that the specified proportion of covenanted offices was open to the Provincial Civil Service, and to remove that proportion from the schedule of appointments

absolutely reserved for the Covenanted Service. For it was clearly their intention that the special powers which they proposed should be given to the Government of India and the Secretary of State should only be exercised on very rare occasions—at any rate within any period of time for which it is now practicable to make arrangements; and their detailed scheme was put forward as one which possessed, as far as was reasonable and practicable, “the necessary element of finality.” It was meant to be a final settlement of the claims of the Provincial Service and to be gradually worked up to during “nearly a generation of official life.”

29. It will be convenient to notice here four other important recommendations unanimously made by the Commission.

The first is their conclusion (which forms the basis of the present Provincial Service scheme) that “in the present circumstances of the country the claims of natives of India to higher and more extensive employment in the public service, and the admission of competent natives of each Province of India to a due proportion of the posts heretofore reserved for the Covenanted Civil Service, can be best provided for by reducing the Covenanted Civil Service to a *corps d’élite*, by limiting its number to what is necessary to fill the chief administrative appointments of the Government and such a number of the smaller appointments as will ensure a complete course of training for junior civilians, and by transferring a corresponding number of appointments to a local service to be separately recruited in each Province in India.” This is in fact the policy declared by the Government of India in 1881 (Home Department Resolution, No. 68, of 15th December 1881), and the principle on which recruitment for the Covenanted Service has been carried on since that year (paragraph 11).

Secondly, the Commission recommended that promotion to the higher offices, such as those of collectors or judges of districts, should be entirely dependent on fitness;

(2.) That promotion to higher offices should be entirely by selection for fitness. and their proposals left “in the hand of the Government an uncontrolled freedom of selection for the higher offices in the administration.” In these respects the Public Service Commission approved and affirmed the principles laid down by the Duke of Argyll in 1869 (paragraph 18).

Thirdly, they expressed the opinion “that for the purposes of the recruitment of the Provincial Service no uniform system applicable to all provinces can at present be recommended, but that a system of open competition should be adopted wherever the Government of India considers it not inexpedient, and that, where open competition is considered unsuitable, a system of competition among candidates previously selected is preferable to a system of nomination, provided that the number of candidates is sufficient to make the competition a real one.” It will be explained in a later paragraph (45 below) what action was taken by the Government of India on this recommendation.

The fourth recommendation was the following:—(1) that each Provincial Service should be locally recruited by the Government of the Province, and (2) that as a general rule recent residence of at least three years should be an essential condition of admission to the Provincial Service. On these points the Commission made the following observations, which are in agreement with the principles enunciated in 1869 by the Duke of Argyll (paragraph 18):—

After careful consideration of the arguments which have been brought forward on the point, the conclusion of the Commission is that it is inexpedient to lay down a rule restricting the recruitment for the Provincial Service to residents of the Province concerned. At the same time, although persons may to some extent be employed, not only with acceptance to the people, but with advantage to the State, in Provinces to which they do not belong, the Commission would see in their indiscriminate employment in this way, to the practical exclusion of natives of the Province, the possibility of a grave political danger, and it may perhaps be said that this danger is certainly not less serious in the case of subordinate appointments, the holders of which are necessarily brought into intimate relations with the inhabitants than in that of the higher administrative posts. Recognising, therefore, the fact that the great majority of the Provincial Service must

necessarily be persons who belong to the Province in which they have to serve, the Commission, while recommending that the recruitment should be open to all natural-born subjects of Her Majesty, would further recommend that the Government of India should prescribe from time to time such limitations in respect of residence or otherwise as may be considered expedient. As a general rule, the Commission considers that recent residence of at least three years in the Province should be an essential condition of admission to the Provincial Service.

(iii).—*The Provincial Service Scheme now in Force.*

30. Lord Dufferin's Government accepted in the main the scheme proposed by the

The Secretary of State approved the scheme of the Commission, but decided that fresh legislation was not necessary, as the scheme could be effectually carried out under the Statute of 1870.

Commission and recommended it to the Secretary of State in their Despatch, No. 58, dated the 9th October 1888. Lord Cross, however, while accepting the substance of the scheme, was of opinion that the Statute of 1870 was the proper method of giving effect to it, and that accordingly section 6 of that statute and the orders of 1879 prohibiting the appointment, without special sanction, of Europeans to the Provincial Service, should be maintained. His Lordship pointed out in his Despatch, No. 104, dated the 12th September 1889, that the reform proposed by the Commission could be carried out by having in each Province a separate "list" of covenanted offices drawn up under the Statute of 1870, and by publicly declaring these "listed" offices to be posts to which members of the Provincial Civil Service, being natives of India, might be appointed under section 6 of that statute. "These lists," he added, "will be arranged to suit the preponderant needs, aptitudes, and circumstances of each Province and its people, and the proportion of the appointments in the different branches will be from time to time varied accordingly."

This system has accordingly been adopted and is now in force. It has not yet been found possible to apply the new arrangements to Burma and Assam. The former Province is indeed so backward that it was expressly excluded from the scope of the inquiry entrusted to the Public Service Commission. While education in it has not yet nearly approached the standard attained elsewhere, and Burmans qualified for office in superior posts are not to be found, natives of other parts of India are as much foreigners and aliens in Burma as ourselves, and are regarded with dislike by the people. The latter Province, in its general backwardness and proximity to wild tribes much resembles Burma, and it has, moreover, in most of the plains districts, a large body of European tea-planters to deal with whom European officers are necessary; Europeans must also be appointed to the districts in the Province which are inhabited by hill-tribes. In the other Provinces the Government of India have, by their resolutions of the 21st April 1892 and 27th January 1893 (Appendices III. and IV.), listed 93 covenanted posts as a commencement. The scheme will work up to the listing of the full one-sixth in each Province; that is to say, for every five posts for which covenanted civilians are recruited in England one post will be transferred to the Provincial Service. It is also capable of yet further extension on the same lines so as to effect a transfer of any larger proportion of posts which may at any time appear expedient; and there will be no difficulty in applying it to Burma or Assam, partially or in its entirety, whenever either of those Provinces may be deemed right for such treatment.

31. There are certain points in connexion with the scheme now in force which it is desirable to make clear, as it appears from the discussions in the House of Commons and elsewhere that there is much misapprehension in regard to them.

In the first place the proportion of covenanted offices reserved for Indian recruits

The proportion of offices reserved for natives of India under the Provincial Service scheme is exactly the same as under Statutory Rules of 1879, viz., one-sixth.

under the new scheme remains precisely the same as under the Rules of 1879. On this point Lord Dufferin's Government had remarked in their Despatch of 9th October 1888—

The ultimate effect of the Commission's proposals will be to fill about one-sixth of the appointments now reserved for covenanted and statutory civilians with members of the Provincial Service. Thus stated, the result, as it affects the recruitment of the Civil Service, does not materially differ from that produced by the statutory system. Since 1880 the Government of India has made arrangements for the recruitment of five-sixths of the requirements of the covenanted

cadre in England and of one-sixth in India. As the Commission does not propose a reduction in the aggregate strength of the *cadre* but a redistribution of offices between the Covenanted or Imperial and the Provincial Services, it would seem that, so far as the Commission's proposals are concerned, no reduction in the scale of recruitment for the Imperial Service is at present called for; and that, in order to give effect to these proposals in regard to the Provincial Service, all that need be done is to cease to recruit officers under the Statute of 1870 and commence recruiting provincial officers to the same extent to which statutory officers have been hitherto recruited. The old system will thus merge in the new without any dislocation of existing arrangements.

Lord Cross in his reply said:—

With regard to the extent of admission, the Government of India have rightly indicated in a passage which I have quoted that this question has already been solved by the reduction of recruitment for the Covenanted Civil Service in 1880, which satisfied the requirements of the Commission. In other words, the reduction of the Civil Service recruits by one-sixth, and the substitution for that one-sixth of natives selected under the Act of 1870 defines the maximum extent to which, under present arrangements, room in the higher offices will gradually become available for competent members of the Provincial Service. The reduction of the Covenanted Civil Service is already taking effect in respect of the sixth of the junior reserved offices; and, when it is completed, that service will cease to have any special claim to the same proportion of the reserved offices as a whole. On the basis of these considerations, it is practicable to calculate the number of reserved offices to which members of the Provincial Service may be appointed after existing prior claims have ceased through efflux of time.

But although the proportion of one-sixth remained the same a change in the system

But there is a difference in the method of calculation. Under the Rules of 1879 about one-sixth of the *recruits* of each year were Statutory Native Civilians. Under the new system one-sixth of the actual *posts* recruited for are transferred to the native service.

was made. Under the old system a proportion not exceeding one-sixth of the *recruits* of each year were natives of India set apart for filling covenanted offices. Had this system been continued rather less than one-sixth of the total number of covenanted and statutory civilians combined would ultimately have been natives of India appointed in India. Under the new system one-sixth of the *posts* in each Province for which these two classes of officers were recruited are transferred to the Native Provincial Service. It has been argued—"The total number of covenanted civilians is (say) 900 or 1,000; therefore the total number of *posts* which the Provincial Service ought to get is 180 or 200." A reference to paragraph 9 of this memorandum will at once show the fallacy in this argument. The total strength of 900 or 1,000 would include also (1) the number of civilians who form the leave-reserve necessary for manning continuously the total number of sanctioned posts, and (2) the number of young civilians under training and not yet fit to hold a sanctioned charge. So also the Provincial Civil Service has its own arrangements for supplying leave vacancies and for men in training, and the strength of that service must *pro tanto* be increased by the transfer to it of the one-sixth of the covenanted posts. Let it be supposed, for instance, that six judgeships and four executive headships of a district in any Province (say Bengal) are held by members of the Provincial Service. Should five of these officers go on leave, the Local Government will be able to appoint five other members of the Provincial Service to officiate during their absence. The number of *officers* holding substantive or officiating judgeships or district headships would then be 15 though the number of *posts* would only be 10.

There appears also to be much misapprehension as to the number of appointments

It is quite a mistake to suppose that, under the Rules of 1879 there would have been 200 or 227 appointments, and that this number has been reduced to 93.

which natives of India would have held under the system of 1879 and the number they will hold under the present system. As already pointed out the total strength of statutory civilians could not have exceeded one-fifth of the number of covenanted civilians. So also under the new system natives of India will get one-fifth of the number of posts held by covenanted civilians. But it has been said that statutory civilians would ultimately have held 227 appointments, and that this number has been reduced to 93. The figure 227 must, it appears, have been arrived at by taking the *estimate* of 7.56 recruits a year (paragraph 22 above) and multiplying it by 30—the supposed number of years making a generation of official life—and taking the result as the total strength of statutory civilians at the end of that period. In a memorial received last year from the Indian Association in

Bengal, which showed much misconception among that body on this and many other points connected with the Provincial Service scheme, it was represented that if the average rate of recruitment of statutory civilians, six a year, had been continued, natives of India would have held 200 covenanted appointments. The Government of India pointed out the mistake involved in this argument in the following extract from their letter, No. 1838, dated 22nd August 1892, replying to this memorial, a copy of which is attached as enclosure No. 2 to the Despatch:—

“When it is estimated that at the recruitment rate of six per annum natives of India would, in the course of 33 of 34 years, ‘have about 200 appointments,’ this computation confuses the number of appointments which would be made during the whole of that period with the number of appointments which would be likely to be held at any one time. The memorialists make no allowance for casualties, such as deaths, retirements, or removals from the service. Sixty-nine persons were appointed during 1879–90 under the Statutory Rules, but only 58 statutory civilians were in the service on the 1st April 1892, the loss during this period being nearly 16 per cent. of the total number of persons appointed. Actuarial calculations, based on the results observed in Indian-recruited services generally, show that, assuming a regular recruitment rate of six a year and making allowances for deaths and retirements in the ordinary course, the highest strength of statutory civilians (which would have been reached in rather less than 30 years) would probably have been between 125 and 135 at the utmost. It would, in reality, have probably been much less, as there was a tendency in later years to appoint as statutory men of more advanced age who had already proved their fitness for such preferment by good service in the subordinate branch. These men would in the ordinary course retire long before completing the normal period of service in reserved posts. If from the total strength of 125–135 be deducted a certain proportion of men who are mere probationers in training, and a certain proportion on account of men who are absent from duty on leave or on joining time in consequence of transfer from one appointment to another, it will be found that the number of actual appointments held by statutory civilians would probably not have exceeded 110–120 at the outside. It can only be because the memorialists have failed to understand the principle of the Provincial Service scheme that they have compared the *total strength* of statutory civilians, as they assume it might have stood 20 years hence, with the number of reserved appointments or actual charges declared open to the Provincial Service in 1892.”

The above will make it clear that the first set of figures, 200 or 227, even if they were correct, would not be comparable with the second, *i.e.*, the 93 posts listed as open to the Provincial Services. The latter is not a fixed number. The list will be revised from time to time; but the number of posts, as well as the proportion of the higher posts, is more than statutory civilians would have got under the system of 1879 for some years to come. As will be explained below (paragraph 35), all these listed posts are not yet available to the Provincial Services; but the lists have been drawn up so as to provide adequately for present requirements and for future expansion at the rate of the one-sixth a year for several years to come.

32. It may also be explained that the desirability (insisted on by Lord Lytton's

The scheme has made provision for the recruitment of natives of good family and social position to covenanted offices.

Government in 1879) of offering sufficient inducements to young men of good family and social position to enter the service has not been overlooked. The Government of India have expressly declared that it will not necessarily be required of an officer that he should pass through all the grades of the Provincial Service before selection for one of the higher listed posts. The Local Government will be able to select a young man for such a post provided that he has furnished proof by a certain period of work in the Provincial Service—or, in the case of the judicial offices, in the practice of the legal profession—of his competence for such a post.

Lastly, it should be understood that the power of selection for all these listed appointments rests with the Local Government under which the officer is employed, and which has therefore full opportunities of judging of his work. In no case does it rest with the Government of India, though in respect of the higher appointments the sanction of that Government is required.

And it leaves the power of selection for higher offices entirely to the local governments.

33. The above is the system now in force for appointing natives of India to covenanted offices. It is practically the same as that recommended by the Commission, only a few modifications having been made. The material points in which the Commission's scheme has been modified will now be stated, and at the same time it will be explained whether such modifications are in a direction more favourable or otherwise to natives of India than the original proposals.

The chief points of difference between the scheme adopted and that recommended by the Commission are as follows.

Commission's scheme has been modified will now be stated, and at the same time it will be explained whether such modifications are in a direction more favourable or otherwise to natives of India than the original proposals.

In the first place, the parliamentary legislation described in paragraph 28 of this

(1.) Fresh legislation has not been resorted to. This is a mere difference of form; but, as such, favourable to natives of India.

memorandum has not been resorted to. This modification is somewhat favourable to natives of India, for although the extent to which they can be employed in covenanted offices must depend not on the law but on the necessities of the public service, it will be easier to enlarge the list of transferred posts by an executive order than by having recourse to parliamentary legislation, or even to a resolution of the Secretary of State in Council expressly declared to be subject to the control of Parliament. The proposal of the Commission for the exclusion of a proportion of each class of offices from the schedule to the Statute of 1861 would have done no more than give the Government the power to appoint members of the Provincial Service to them, a power which the Government already has under the Statute of 1870 in respect of such members of the Provincial Service as are natives of India. The special power of appointment which the Commission proposed should be given to the Government of India, and the power which they proposed to be given to the Secretary of State to make alterations in the schedule to the Statute of 1861 at any future time are not more than the powers which are already vested in the Government of India, who can at any time, with the Secretary of State's sanction, alter or enlarge, under section 6 of the Statute of 1870, the list of appointments open to native members of the Provincial Service. Further, in the non-Regulation Provinces the Statute of 1861 raises no legal bar to the appointment of natives of India to any office, with one or two exceptions. The proposal of the Commission to extend the Statute of 1861 to non-Regulation Provinces would have restricted by law the power which the Governments in India now have to appoint natives to covenanted offices in these Provinces. To give an instance, there are at the present time two native officers, not covenanted civilians, who are in executive charge of districts in the central Provinces, although only one headship of a district has been "listed." As the Statute of 1861 does not strictly apply to these Provinces, the second appointment has been made by special executive arrangement.

34. *Secondly.*—Section 6 of the Statute of 1870 under which natives of India (only)

Section 6 of the Statute of 1870 and the orders of 1879 have been retained. This modification is distinctly in favour of natives of India.

may be appointed to covenanted posts listed as open to the Provincial Service has not been repealed as was proposed by the Commission, but has been retained as the basis of the new scheme. This modification is distinctly favourable to natives of India and unfavourable to Europeans, who would, under the proposal of the Commission, have been eligible for appointment to any of the covenanted posts transferred to the Provincial Service.

Thirdly.—The orders of 1879 (paragraph 39) imposing restrictions on the appointment of Europeans to the Provincial Service have also been retained. This also is favourable to natives, as under the original proposal Europeans might have been freely appointed to the Provincial Service, and on such appointment they would have become eligible for promotion to the listed covenanted posts.

15. *Fourthly.*—The arrangements recommended by the Commission were intended to be of a permanent kind, and to be given effect to gradually during a generation of official life. In lieu of a permanent and final list of appointments, estimated at about 108, for which members of the Provincial Service (Europeans as well as natives), were to be eligible, and which number could only be increased by certain special powers to be exercised under proposed legislation, the list of appointments thrown open to that service has been prepared with reference to proximate reasonable requirements. There is no finality about this list, which is capable, under the terms of section 6 of the Statute of 1870, of alteration and expansion according to varying necessities. The classes and number of

(3) The list of offices open to the Provincial Service is not permanently fixed, but alterable from time to time. This is a modification in detail. The proportion will finally be about the same as that recommended by the Commission.

of appointments thrown open to that service has been prepared with reference to proximate reasonable requirements. There is no finality about this list, which is capable, under the terms of section 6 of the Statute of 1870, of alteration and expansion according to varying necessities. The classes and number of

listed offices may be modified or added to at any time by the authorities in India. The new scheme has, of course, been introduced with due regard to the preferential claims of existing officers—whether Indian civilians, or military or uncovenanted officers, or native statutory civilians—having regard to the conditions under which they joined the service (paragraph 31); and it will thus necessarily take some years before all the 93 listed posts are actually held by members of the Provincial Service. But it would only have raised false expectations which could not be realised within any reasonable time to have listed a larger number at present. The transfer of posts to natives of India will not, however, be less rapid in those Provinces to which the scheme has been applied than it would have been under the Statutory Rules of 1879, as there is annually a deficiency of one-sixth in the number of recruits from England which must be supplied from among Indian recruits. Under this head, therefore, the scheme actually introduced is at least as favourable to natives of India as that proposed by the Commission.

36. *Fifthly*.—The full proportion of the covenanted judicial offices recommended by

(4.) The full proportion of the Commission has not yet been listed. The reason for this has already been partly explained in the preceding paragraph; a larger proportion would not, within any reasonable time, have become available for transfer to the Provincial Service. Taken by itself, and assuming (which

is not the case) that the proportion listed was to be the permanent proportion, this modification might justly have been regarded as unfavourable to natives of India. But with their recommendation for the transfer of one-third of the judgeships, the Commission combined a recommendation that only one-tenth of the executive headships of districts should be made available to the Provincial Service. The importance of the position of a district and sessions judge has already been pointed out in paragraph 6 of this memorandum. He has not only judicial duties of the highest importance, but also great administrative responsibility in connexion with the working of the subordinate civil courts, and in his capacity of sessions judge the entire control over the criminal administration of the districts or district under his charge. Although natives of India in most Provinces have undoubtedly shown greater aptitude for purely judicial than for executive and magisterial work, they have yet, as a body, to prove their fitness for administrative business and for the original and appellate criminal work of a sessions judge in the interior. Events may show, moreover, that there are many districts of which the executive charge may be entrusted to native officers quite as

It is, moreover, necessary to proceed cautiously in regard to headships of districts executive and judicial. suitably as, or more suitably than, the judgeship. It is therefore necessary to proceed gradually and tentatively, so that, if expedient, some readjustment may be made between the proportions—one-tenth and one-third respectively—of the executive and judicial district charges which the Commission recommended should be made over to the Provincial Service.

37. *Sixthly*.—No memberships of the Board of Revenue or financial commissioner-

(5.) Membership of Board of Revenue, financial commissionerships and commissionerships of divisions have not been listed. ships or divisional commissionerships have been included in the list of appointments open to the Provincial Service. To this modification, too, the reasons given in paragraph 35 apply. As to the character and importance of these

offices, a reference is invited to paragraph 4 of this memorandum. Appointments to these very high offices are invariably made by special selection. No covenanted civilian, however senior, has a claim to them apart from such selection. The commissioners are selected from amongst the best and ablest of the senior district executive officers, and members of the Board of Revenue and financial commissioners, who

These high offices are invariably filled by special selection and cannot at present be listed. control the whole policy of the provincial revenue administration, are selected from among the best and ablest of the senior commissioners. An officer of the Provincial

Service would (like a covenanted civilian) have to prove his fitness by many years' meritorious service as executive head of a district before he could be selected for a commissionership. As commissioner, he would have to serve many years before he could be selected to be a member of the Board of Revenue. It is obvious that in a scheme drawn up with reference to proximate requirements, these appointments could not be listed as open to the Provincial Service. No statutory civilian appointed under the Rules of 1879 has yet attained the substantive position of an executive head of a district (though some exceptional appointments have been made to substantive district judgeships); and *a fortiori*, no member of the Provincial Service to be

appointed under the new system would for many years have rendered sufficient service in a district charge to warrant his selection for a commissionership. The Public Service Commission were indeed alive to these considerations, and it is only in view of their scheme being of a permanent character, and also because their proposals (paragraph 28) would otherwise have taken away from the Government the power which it now possesses under the Statute of 1870 to appoint natives of India to these offices that they recommended that a small proportion of these appointments should be excluded from the schedule of offices absolutely reserved for the Covenanted Service. Their

A strong minority of the Commission were opposed to these offices being declared open to the Provincial Service.

observations on this point will be found at pages 74 and 75 of their Report. On page 74 it is remarked: "In regard to . . . memberships of the Board of Revenue and commissionerships of divisions . . . there was considerable difference of opinion. The Commission considers that although the appointment to these high offices of persons who are not members of the Imperial (Indian or Covenanted) Civil Service may not be practicable for some time to come, yet . . . there is no good reason for raising a bar against the admission in the ordinary course of members of the Provincial Service, who may show that they possess the qualifications necessary for high executive functions; that to take power for such cases in ordinary course is better than to resort to exceptional powers under the statute . . . that under the Statute of 1870 it is now open to the Government to make such appointments, and that the proposal is only a development of the principle at present in force of selecting officers for commissionerships and member-

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Khan Bahadur, C.I.E.
Mr. W. H. Ryland.

ships of Boards of Revenue on the grounds of fitness and efficiency irrespective of seniority." The difference of opinion referred to in this extract is embodied in the dissent recorded by six members of the Commission* (one a Hindu and another a Muhammadan gentleman). The dissentient members dissented entirely from the recommendation as regards memberships of the Board of

Revenue, and "acquiesced only with much hesitation" in the recommendation regarding Commissionerships. Lord Dufferin's Government, in forwarding their proposals to the

Secretary of State, expressed their opinion that it was not advisable to remove a membership of the Board of Revenue from the schedule to the Statute of 1861, and though they had no objection to the removal of one of the Province, they did not think that it should be transferred

commissionerships in each to the Provincial Service.

But Provincial Service officers may still be appointed to these offices if they are selected from them.

Service to any one of these offices if he is selected for it; and, apart from such selection, no officer, of whatever service, can be appointed to them. It seemed to the Government of India better that this exceptional power of appointment under the Statute of 1861 should be relied upon, at all events for the present, in the case of these high offices, especially as the lists actually drawn up are subject to variation from time to time and not, as the list proposed by the Commission, of a permanent character, than that expectations should be created which could not be realised within any reasonable time. Whether it will be possible or desirable to list these offices as open to the Provincial Service at some future date will depend on the manner in which members of the Provincial Service acquit themselves as district executive and revenue officers.

Several other small modifications of detail have been made in the scheme proposed by the Public Service Commission; but, except in the particulars mentioned above, they are not of sufficient importance to require notice.

V.—MEASURES FOR EXTENDING EMPLOYMENT OF NATIVES OF INDIA IN THE PROVINCIAL AND SUBORDINATE CIVIL SERVICES.

38. From what has already been said it will be clear that as regards the employment of natives of India in substitution for Europeans in the civil services, no comparison

In regard to the employment of natives in substitution for Europeans there is no comparison between the condition of things (1) before 1879, (2) after 1879. can fairly be made between the period before 1879 and the period after that year; and that no opinions expressed on the subject before that year can fairly be regarded as applicable to the existing state of things. And this is so for several reasons. In the first place natives of India have since that year been systematically recruited to hold covenanted offices. Secondly, the recruitment of uncovenanted Europeans in India for holding covenanted charges has been altogether put a stop to since 1876, save under very exceptional circumstances. Thirdly, the Provincial and Subordinate Services have since 1879 been almost exclusively reserved for natives. Lastly, there has been similar progress in other branches.

An example of the last-mentioned change will be found in the fact that while at the end of 1879 there were only two natives of India occupying seats in the high courts, on the 1st July 1893 there were six. Another instance is the high office of Inspector-General of Registration in Madras, which is now substantively held by a native officer; a native member of the Provincial Service has recently been appointed to officiate in the corresponding appointment in Bengal. As regards the second and third points, it is only necessary (in addition to the remarks to be made in the next paragraph) to refer to paragraph 53 of the Public Service Commission's Report, which shows that about 92 per cent. of the total strength of the Provincial and Subordinate Services in all Provinces except Burma, which was beyond the scope of the Commission's inquiry, were either Hindus or Muhammadans. As regards the first point, it may be remarked that in 1879 no natives of India (covenanted civilians excepted) held executive or judicial charge of districts; during 1893, excluding native members of the Covenanted Service, as many as 29 native gentlemen have held charge of districts—in some cases, it is true, only for short periods.

39. Previous to 1876 there was no restriction on the employment of Europeans

(1.) The recruitment of Europeans in India for covenanted offices was stopped in 1876;

other than members of the Covenanted Service, either in covenanted offices in the non-Regulation Provinces or in the Uncovenanted (now Provincial and Subordinate) Judicial and Executive Services. Much correspondence

passed between the Government of India and the Secretary of State as to the best means by which native agency might be substituted for this class of officers, and in 1876 Lord Salisbury directed, in his Despatch, No. 81, dated the 13th July, that the appointment of uncovenanted Europeans to covenanted offices in the non-Regulation Provinces should be discontinued. Accordingly, such appointments have since only been made in very special cases and with the previous sanction of the Secretary of State (paragraph 8).

In 1879, Lord Lytton's Government issued the orders already referred to (paragraph

and (2) the appointment of Europeans to the Provincial Service without special sanction was prohibited in 1879. Since then the Provincial and Subordinate Services have been maintained as essentially native services.

27) to the effect that no person other than a native of India should in any Province of the Bengal Presidency be appointed to any office in the Uncovenanted Judicial and Executive Services carrying pay of Rx. 240 a year or upwards (there is no probability of Europeans seeking office without the prospect of rising to more pay than this) without the special sanction of the Government of India.

These orders were extended by the Secretary of State to Madras and Bombay, and in the case of those Presidencies the sanction of the Secretary of State was required to the appointment. A copy of these orders is enclosed as Appendix V. to this memorandum. The records of the Government of India show that from 1871 to 1893, or in 22 years the appointment of only 46 Europeans has been sanctioned by the Governor General in Council; and of these no less than 32 were appointed in the Province of Burma, where suitable indigenous material is not available, and where a large increase to the European staff was found necessary owing to the disturbed state of the country for some time after the annexation of Upper Burma. In the other Provinces taken together (*i.e.*, Bengal, the North-western Provinces and Oudh, the Punjab, the

Central Provinces and Assam), the total number of such appointments to the Executive and Judicial Departments was 14 only.

It will thus be seen that, in addition to promoting the appointment of natives to covenanted offices, the Provincial and Subordinate Services are now maintained almost entirely as native services, though the appointment of Europeans is occasionally found to be desirable or necessary. It has frequently been urged that the exclusion of the European element from these services, which come most in direct contact with the people, has in some parts of India (particularly in those where European settlers are numerous) tended to weaken the administration; but the conclusion come to by the Government has been that though the occasional appointments of Europeans will be necessary or expedient, these services should be maintained as essentially native services, and that, therefore, the restriction imposed by the Orders of 1879 should not be withdrawn.

VI.—THE COMPETITIVE SYSTEM FOR RECRUITING THE COVENANTED SERVICE.

40. So far this memorandum has dealt with the constitution of the Covenanted Service and the methods adopted in recent years to extend the employment of natives of India in the Executive and Judicial Departments. To recapitulate briefly these methods as now established, are (1) to maintain the Covenanted Service at the smallest possible strength sufficient to fill those posts and classes of posts for which European material is required; (2) to assign all other posts to the Provincial and Subordinate Services, to be maintained essentially as native services; and (3) to appoint natives of India of proved merit and ability to posts retained in the Covenanted Service up to approximately one-sixth of the annual recruitment.

41. The next point for consideration is the method of recruiting covenanted civilians. Before 1853 candidates for the service were nominated to the College at Haileybury by the Court of Directors of the East India Company, and after a course of study they were sent out to India. This was altered in that year to a system of competitive examination because that was considered, in respect of European candidates, a better method than a system of selection by patronage. The principle of competition was first laid down in a Statute of 1853 (16 & 17 Vict. c. 95.), but it was re-affirmed and placed on its present working basis by the Statute of 1858 (21 & 22 Vict. c. 106. s. 32) on the transfer of the Government of India from the East India Company to the Crown. This statute placed the duty of making regulations for the admission of candidates to the examination on the Secretary of State, acting with the advice and assistance of Her Majesty's Civil Service Commissioners. The working of these regulations has now to be considered with regard to the subjects of examination, the age limits, and the place of examination, with special reference to the rules on these points so far as they affect natives of India.

The subjects of examination were decided upon in accordance with the report prepared in 1854 by a distinguished committee* presided over by Lord Macaulay. The committee considered "that the examination ought to be confined to those branches of knowledge to which it is desirable that English gentlemen who mean to remain at home should pay some attention"; and the subjects selected were accordingly those ordinarily taught at English public schools and universities. Two oriental subjects, Sanskrit and Arabic, were, with some diffidence, included in the scheme of the examination (also with reference to the circumstances of education in the United Kingdom); but the committee on the whole recommended the inclusion of these languages on account of their "intrinsic value in the eyes both of philologists and men of taste" and of the assistance which a knowledge of them would give a civilian in mastering the vernacular languages and appreciating native methods of thought. The subjects remained substantially the same up to 1878, when certain alterations were made consequent on the lowering of the maximum age from 21 to 19; but the English character of the examination was still fully maintained. The Civil Service Commissioners remarked, however, that, except for the sake of native candidates, they would

*Mr. (afterwards Lord) Macaulay.
Lord Ashburton.

Dr. Melvill, Principal of Haileybury College.

Rev. B. Jowett, lately Master of Balliol College, Oxford.

Mr. (afterwards Sir John) Shaw Lefevre.

“propose to exclude Arabic and would hesitate to include Sanskrit.” In 1892 some further alterations were made consequent on the raising of the maximum age to 23, but the character of the examination remained the same. It will thus be seen that the examination was devised and has been consistently maintained as a test for European candidates *inter se*. Natives of India were admitted to it on the same terms as Europeans, but no special arrangements were made as regards them, except that Sanskrit and Arabic having been included in the scheme of examination in 1855, it was judged unfair to them to exclude these subjects after 1878.

42. Lord Maculay's Committee recommended that the minimum age for admission to the competitive examination should be fixed at 18 and the maximum at 23. They suggested this maximum in view of the desirability of enabling a gentleman studying in England to complete his education, preferably at an university, before joining the Covenanted Service. In 1860 the maximum age was reduced to 22, chiefly on the ground that candidates selected at a later age, if kept in England for even one year of special study, would be too old to commence life in India. In 1866 the maximum was further lowered to 21, in consequence of the introduction of a system of two years' probation in England before the candidates were allowed to proceed to India, and the minimum was at the same time lowered to 17. In 1878 the maximum was still further lowered to 19, as it was thought desirable to require selected candidates to pass their two years' probation at some university or college approved by the Secretary of State. These age limits, 17 to 19, proved unfavourable to natives of India desirous of competing in England, and many complaints were made in this country that they operated to exclude natives from the Covenanted Service (paragraphs 21, 23, and 24). Consequently one of the questions referred to the Public Service Commission for inquiry was whether the age limits should be altered in the interests of native candidates. The Commission recommended in their interests that the minimum and maximum limit of age should be raised to 19 and 23 years respectively. It was finally decided, having regard also to the considerations applicable to the case of European candidates in England, that the maximum should be fixed at 23 and the minimum at 21. These are the present age limits, and they are believed to be extremely favourable to natives of this country intending to proceed to England for the examination.

43. It follows from the fact that the competitive examination was designed as a means for the selection of British born candidates, and in order to recruit an essentially European service, the circumstances of natives having only been so far considered as to ensure that there should be no unfair obstacles in the way of their competing in England under the prescribed tests, that the place of examination was intended to be in the United Kingdom. Applications have from time to time been made for holding an examination in India, but these have invariably been negatived. It has always been recognised that the appropriateness of competitive examination as a test between European candidates depends on two elements—(1) the antecedent presumption that most of the candidates who will be successful according to the purely literary tests will also possess the requisite moral and other qualities for administrative office in India; and (2) the very important fact that education in the United Kingdom, at a large school or college, embraces not merely a course of literary instruction but also a training in life and conduct which forms the character. So also competition has been accepted (though not without hesitation) as, on the whole, a good test in respect of natives of India competing *in England*; for the moral courage and perseverance which are exhibited by a native candidate in proceeding to England and competing successfully there may fairly be taken as indicating the possession of more than average qualities of character. But with regard to natives competing in India the case is entirely different; apart from other grave objections, pointed out in the Despatch, the two elements which are calculated to make competition a not unsatisfactory test as between Europeans in England are wholly wanting in their case.

In paragraphs 17, 18, 21, 23, and 24 of this memorandum, and in paragraphs 15 to 18 of the letter of the 5th August 1893 (Enclosure No. 1 to the Despatch), a brief

The Public Service Commission emphatically rejected the proposal for simultaneous examinations in India and England. account has been given of the discussions on this point up to the appointment of the Public Service Commission. One of the most important questions referred to the Commission was whether the open competition for the Covenanted Service should be held simultaneously in India and in England. To this

question they returned an emphatic negative for reasons which appear to be very cogent. Their observations on this subject are annexed as Appendix VI. to this memorandum. There were three partial dissentients among the native members of the Commission, but the three other native members (one Hindu and two Muhammadan gentlemen) concurred entirely with the majority. The three dissentient members (two of whom are since dead) recorded their dissent in the following terms:—

“The members of the Commission named in the margin do not share in the apprehensions expressed above as to the probable result of the introduction of an examination in India for the Covenanted Civil Service simultaneously with the examination in England; and they wish it to be noted that they have not deemed it necessary either to state at length the arguments in support of the view they have taken, or to meet the objections raised against it, as the scheme, which is now *unanimously* recommended by the Commission, is, in their opinion, well calculated to secure the end they have in view, and at the same time is not open to the objections urged against simultaneous examination.”

It will be observed from paragraphs 33 to 37 of this memorandum that the scheme which the Commission were unanimous in recommending has in substance been adopted. The Commission were not unanimous as regards the proposal to declare memberships of the Board of Revenue (or financial commissionerships) and commissionerships of divisions open to the Provincial Service. A strong minority objected to the proposal as regards memberships of the Board of Revenue; and they dissented from the proposal as regards commissionerships of divisions in the same sense as that in which the three gentlemen named above dissented from the conclusions of the Commission as regards simultaneous examinations (paragraph 37).

The Government of India and Secretary of State agreed in the conclusions of the Commission on this question. In his Despatch, No. 104, dated 12th September 1889, on the subject of the reorganisation of the Executive and Judicial Departments, Lord Cross remarked:—

“It is not surprising that the Commission should have arrived at the conclusion that as so little room now remains for reducing the members of the Covenanted Civil Service which may be said to represent the only permanent English official element in India, the importance of recruiting that service, with reference to the maintenance of English principles and methods of government, cannot be over-rated, and that, therefore, the idea of holding a competitive examination for native candidates for the Covenanted Service in India as well as in England is altogether inadmissible. The Government of your predecessor were unanimously of opinion that this view is correct, and I cannot better express my own conclusion than by quoting the words of their Despatch:—‘The true principle, on which the Commission has very strongly insisted, is that the conditions of the open competitive examination should be framed with the object of securing candidates trained in the highest and best form of English education. If, under such conditions, native candidates succeed, they will then, as Lord Macaulay said, ‘enter the service in the best and most honourable way.’ The establishment of simultaneous competitive examination in India and England would sacrifice the principle we have stated. It would be entirely foreign to the intention of the framers of the competitive system, and be open to grave practical objections. We therefore fully agree with the Commission in deprecating the entertainment of any such proposal.”

44. The present system is, therefore, as follows:—

Under the combined operation of the Statutes of 1858 and 1861 the Covenanted Civil Service and all the offices included in its *cadre* are open to all Her Majesty's subjects, natives of India and others, subject to competition in England and to the necessary qualification of a high English education.

Under the Statute of 1870 it is open to the authorities in India to appoint natives of India (only) to offices in the Covenanted Service, notwithstanding the Statute of 1861, and though they have not been admitted to the service in accordance with the Statute of 1858.

By the statutory system established by the Rules of 1879 about one-sixth of the total number of recruits in each year for the Covenanted Civil Service (military recruits excepted) were natives of India appointed under the Statute of 1870; by the recently

sanctioned system (also under the Statute of 1870) one-sixth of the offices in the Covenanted Civil Service for which recruitment is made each year (offices reserved for military officers excepted) is transferred to the Provincial Service and declared open to native members (only) of that service.

The Provincial and Subordinate (formerly Uncovenanted) Civil Services, which contain the great majority of executive and judicial officers, are, under executive orders, almost entirely reserved for natives of India.

The principle of the existing arrangements is that, just as the Covenanted Service is, as observed in Lord Cross's Despatch, the only permanent English element in the Executive and Judicial Departments, so the Indian recruited services in these departments are essentially native services.

VII.—THE COMPETITIVE SYSTEM AS APPLICABLE TO RECRUITMENT FOR THE PROVINCIAL CIVIL SERVICE.

45. The Provincial Civil Services, as already explained, are entirely recruited in India, and are essentially native services (paragraph 39). Generally speaking, the qualities required for filling the ordinary posts in this service are to be found in educated natives of India. Acting on the recommendation of the Public Service Commission (paragraph 29 *supra*) the Government of India asked the local governments to consider whether these services could not be recruited by competition so far as vacancies therein were not to be filled by promotion from the Subordinate Civil Service. In the Lower Provinces of Bengal the system was already in force; but none of the other local governments, except that of Madras, were able to accept the suggestion. The reasons assigned were generally these:—that competition was unsuitable to the conditions of the Province; that success at an examination would be confined to particular classes only; and that large and influential classes of the population, whose interests it was a necessary to protect, would be practically excluded from a share in the appointments. For instance, in the report on this subject from the Punjab, Sir James Lyall, the then Lieutenant-Governor, examined the lists of students who had passed the B.A. and M.A. examinations of the Punjab University from 1882 to 1888. After remarking that in these lists he did not find “a single Rajpút, Pathán, Ghakkar, Siál, Moghal, Awán, Beloch, Ját, or in fact any member of the great landholding tribes, in which the political power and fighting strength of the country has always resided and still resides,” he scrutinised the small number of Sikh and Muhammadan names which appeared, and found that, with few exceptions, they were all “men of one type, Khattris and Banias and Aroras, and one or two Shekhs, the sons of shopkeepers and subordinate officials.” “The educational attainments of such men,” he added, “would no doubt enable some of them to fill a respectable place in a civilised and complicated system of administration. But in constituting the administrative staff, we must, for the most part, look to men of a different stamp to help us to govern such a country as the Punjab with success at any time; and, still more, to help us to hold it if at any period our political position is less secure. Almost all these graduates are also dwellers in towns as opposed to dwellers in the country; and in a Province where the rural population vastly exceeds the urban, and where there is so much distinction between the bodily vigour of the countryman and the townsman it seems specially dangerous to give a practical monopoly of the upper part of the service to the townspeople.”

It has only been found practicable to establish the open competitive system in two provinces (Bengal and Madras) for recruiting the Provincial Service.

In other Provinces the result would have been to give certain limited classes in the Province a practical monopoly of the service to the exclusion of other and more influential classes.

Sir A. Mackenzie, Chief Commissioner of the Central Provinces, wrote:—“The principle of open competition, if adopted for the recruitment of the Provincial Service, would result in these Provinces in flooding the service with Mahratta Brahmins to the exclusion of every other class.”

Sir A. Colvin, Lieutenant-Governor of the North-western Provinces and Oudh, while strongly opposed to open competition, was of opinion that, if the principle was to be adopted, at least 30 years' residence in the Province should be insisted on as a condition of admission to the examination.

Lord Dufferin's Government came to the conclusion that open competition would not be a suitable method of recruitment for the Provincial Services under present circumstances. And finally, Lord Cross, in his Despatch of September 1889, observed:—

"The recruitment for the Provincial Service will be made under rules framed by the Provincial Government with the sanction of the Government of India. The rules (in the words of your predecessor's Despatch), while making due provision for indispensable educational attainments, must be such as are adapted, on the one hand, to obtain for each Province thoroughly efficient candidates, and, on the other hand, to secure the due representation in the public service of the different classes of the community."

It is unnecessary to enter into the details of the rules which have actually been framed. A certain proportion of the vacancies in the Provincial Services must everywhere be filled by the promotion of deserving officers from the Subordinate Services; for filling the rest, while adequate literary tests have been established everywhere, competition has been considered altogether unsuitable in the North-western Provinces and Oudh, the Central Provinces, and Assam. The same is the case as regards Burma. In the Punjab one-fourth of the vacancies are, as before, offered to competition among previously selected candidates. The Madras Government have adopted a scheme for offering a proportion of the vacancies (about one a year) on the executive side of the Provincial Service to open competition tentatively for seven years; and it is intended that after that two-thirds of the vacancies shall be filled by competition. The Government of India have invited the Bombay Government to consider whether a similar system might not be tried in that Presidency, but the correspondence is not yet complete.

46. The most notable experience, however, in connexion with recruitment by com-

In Lower Bengal, however, the Provincial Service (Executive Branch) has been recruited by competitive examination since 1884. Up to 1889 the system was one of pure competition.

Province containing three Provinces is 45,217,618, and the total Muhammadan population 23,437,591; the Hindus of Behar number 20,095,745, and those of Bengal proper 18,068,655; the Muhammadans of Bengal proper number 19,582,349. The competitive system was first introduced during the Lieutenant-Governorship of Sir R. Temple in 1875. It was discontinued by his successor Sir Ashley Eden, but was revived in 1884. From 1884 to 1893 66 candidates have entered the service *by pure competition*. Of these all but

All the successful candidates, with one or two exceptions, belonged to one class, Hindus of Bengal proper. Consequently in 1889 it was found necessary to change the system.

three belonged to one class—that of Bengali Hindus, with possibly one or two converts to other religions of Hindu origin. Outside this class only one Hindu from Behar and two statutory natives of India of pure or mixed European descent have succeeded in getting appointments during these years. No Muhammadans have secured any of the places offered to pure competition. From 1884 up to 1889 the system was one of pure competition, the candidates standing highest in order of merit obtaining appointments. In that year the Local Government reconsidered this arrangement. The Lieutenant-Governor, Sir Steuart Bayley, observed, in a resolution, dated the 24th April 1889 (pages 808–816, Supplement to "Calcutta Gazette"):

In any scheme that is to be final the principle of competition must occupy a prominent, perhaps the most prominent, place. But competition alone will not meet all our wants. We have to consider the diverse character of the population with which we are dealing, and to guard against a single race or class obtaining a virtual monopoly of the service by which a large proportion of the everyday work of administration is done. At the present time, and probably for many years to come, the immediate effect of recruiting the subordinate executive service on an exclusively competitive basis will be to *debar Muhammadans, natives of Behar, and natives of Orissa from any reasonable chance of obtaining appointments*. Not only would this be unfair in itself and contrary to established policy, but it would tend to encourage feelings of race jealousy and antagonism, which have already begun to show themselves, and which might at any time give rise to serious difficulties. It is as true now as when Sir Richard Temple wrote his minute of the 22nd September 1875 that "there may be many good reasons, besides the winning of a "place in an examination, for appointing native gentlemen to the higher grades "in the public service." Social or representative position, family connexions, distinguished university attainments, meritorious service in other branches of the

administration—these are some of the qualifications which may give a claim to appointments by nomination.

The scheme of the examination was accordingly altered, and since 1889 only a proportion of the vacancies have been offered to pure competition; the balance has been filled up by the Local Government by selection from among the candidates who obtain not less than one-third of the total number of marks in such a way as to distribute the appointments fairly among the various divisions, races, and creeds of the Province. In the rules for the Bengal Provincial Service, which have recently been under the consideration of the Government of India, it is provided that about one-third of the vacancies shall be filled by pure competition, one-third by selection after examination, and the remainder by nomination, chiefly of officers of the Subordinate Service for promotion to the Provincial Service.

47. The result of a consideration of the question is that none of the local governments or high courts concerned have agreed to adopt the principle of open competition for recruiting for the judicial branch of the Provincial Civil Service; and that only two of the responsible local governments have been able to adopt it in filling even a proportion of the executive appointments. In Bengal, where the principle was in force for several years in the executive branch, it had, as has just been shown, to be restricted and tempered with selection in consequence of the administrative dangers and difficulties which would have ensued from the monopoly of official employment by a particular section of the people. These being the results in a single Province and in respect of the Provincial Service, the administrative difficulties and danger likely to arise from the application of the principle to the Covenanted Service, which is recruited for the higher posts all over the Empire, are too evident to need further speculation.

APPENDICES.

I.—*Cadre* of the Covenanted Civil Service in 1893.

II.—Actual employment of officers (other than natives of India appointed under 33 Vict. c. 3. s. 6) on the 1st July 1893.

III.— }
IV.— } Referred to in paragraph 30 of memo.

V.—Referred to in paragraph 39 of memo.

VI.—Referred to in paragraph 43 of memo. (paragraph 60 of the Public Service Commission's Report).

APPENDIX I.

(PARAGRAPH 3 of MEMORANDUM.)

Cadre of the COVENANTED CIVIL SERVICE, including Offices reserved for or held by (1) Covenanted Civilians, (2) Military Officers, (3) Uncovenanted Officers, and (4) Statutory (Native) Civilians; and (5) Offices declared open to Native Members of the Provincial Civil Services.

Government or Province.				Number of Executive and Judicial Covenanted Offices.										Number of Covenanted Officers in Special Services and Departments.									
1.	2.	3.	4.	5.	6.	District Offices.				General Offices.		13.	14.	15.	Population and Area to each Executive and Judicial Office. (Column 15)		18.	19.	20.	21.	22.	23.	
						Commissionerships of Divisions.	Executive District Headquarters.	Divisional or District and Sessions Judgeships.	Subordinate, Executive, and Judicial Charges.	In Land Records and Settlement Departments.	Miscellaneous.				Population.	Area.							
	Total Number of Covenanted Offices.	Area of Province (excluding Kendaary States) in square Miles.	Population of Province (excluding Kendaary States).	Executive and Judicial Offices superior to Commissionership of Division.	Secretariat, &c. Offices.	7.	8.	9.	10.	11.	12.	Total Columns 5 to 12.	Listed for transfer to Provincial Service.	Balance at present reserved for Covenanted Civilian and Military Officers.	16.	17.	Political.	Accounts.	Police and Jails.	Postal.	Other Departments, &c., Education, Salt, Opium, Custom, Registration.	Total Columns 16 to 21.	
Government of India	55	—	—	3	12	—	—	—	—	—	—	15	—	15	—	—	24	10	—	5	1	40	
Madras	111	141,189	35,630,440	8	9	—	22	20	42	1	2	104	15	89	400,342	1,586	2	—	2	—	—	3	7
Bombay	118	125,064	18,857,044	6	6	4	25	17	50	2	2	112	18	94	200,607	1,380	4	—	1	—	—	1	6
Lower Provinces of Bengal	164	151,543	71,346,987	9	10	9	45	30	45	7	7	162	20	142	502,443	1,068	—	—	1	—	—	1	2
North-western Provinces and Oude.	163	107,503	46,905,085	7	10	9	48	26	50	7	2	159	21	138	339,892	779	—	—	1	—	—	3	4
Punjab	111	110,667	20,866,847	6	8	6	31	13	33	8	2	107	12	95	219,651	1,165	3	—	—	—	1	4	
Burma	90	171,430	7,605,560	4	6	8	34	2	26	4	1	85	—	85	89,477	2,017	5	—	—	—	—	5	
Central Provinces	53	86,501	10,794,294	2	4	4	18	2	18	2	—	50	7	43	250,798	2,012	1	—	1	—	1	3	
Assam	33	49,004	5,476,833	1	1	1	11	1	13	1	1	30	—	30	182,561	1,633	2	—	1	—	—	3	
Total	898	942,901	217,473,090	46	66	41	234	111	277	32	17	824	93	731	297,501	1,290	41	10	7	5	11	74	

APPENDIX II.

(PARAGRAPH 9 of MEMORANDUM.)

STATEMENT showing NUMBER of OFFICES actually available for filling COVENANTED CHARGES on 1st July 1893.

1.	Total on the Lists.	In Special Departments.		In General Administration, exclusive of Men merely in Training (Executive and Judicial Departments).		Men in Training only.		Square Miles of Area to one Officer actually employed (Column 5).	Population to one Officer actually employed (Column 5.)
		Present on 1st July.	Absent on Leave on 1st July.	Present on 1st July.	Absent on Leave on 1st July.	Present on 1st July.	Absent on Leave on 1st July.		
Covenanted civilians - - -	898	52	9	582	166	87	2	—	—
Military officers - - -	104	3	2	63	27	9	—	—	—
Uncovenanted officers - -	62	5	—	44	9	3	1	—	—
Statutory (native) civilians -	48	1	—	41	6	—	—	—	—
Total - -	1,112	61	11	730	208	99	3	1,292	2,97,908

APPENDIX III.

No. 9 Public
1342-1352.EXTRACT from the PROCEEDINGS of the GOVERNMENT of INDIA, in the HOME DEPARTMENT
(Public), under date Simla, the 21st April 1892.

READ—

The Report of the Public Service Commission and the opinions expressed thereon by local governments and administrations.

The Despatch of the Government of India to the Secretary of State, No. 58, dated the 9th October 1888, reviewing and stating its conclusions on the principle questions discussed in the Report.

The Despatch of the Secretary of State, No. 104, dated the 12th September 1889, communicating his Lordship's decision upon the recommendations made in the Report and by the Government of India so far as they deal with the higher branches of executive and judicial work throughout India.

Letters to local governments and administrations, dated the 14th February 1890, forwarding a copy of the Secretary of State's Despatch, and making suggestions as to the manner in which its decisions may best be given effect to.

Replies from the local governments and administrations consulted.

The Despatch of the Government of India to the Secretary of State, No. 9, dated the 10th February 1892, stating the conclusions arrived at by the Governor General in Council on the subject.

The reply of the Secretary of State, No. 30, dated the 24th March 1892, concurring in the conclusions set forth by the Government of India.

RESOLUTION.

In his Despatch, No. 104, dated 12th September 1889, the Secretary of State for India in Council announced the decision at which he had arrived on the recommendations made in the Report of the Commission appointed in 1886 to consider the question of the admission of natives of India to higher and more extensive employment in the civil administration of the country.

2. The Secretary of State's Despatch having been communicated to the local governments and administrations for consideration, and their replies having been received, the Governor General in Council is now in a position to pass orders upon the most important points calling for determination.

3. The following appointments in each Province shall for the present be entered in the list as open to the Provincial Service:—

Madras.

Heads of districts - - -	-	-	-	-	-	-	-	2
District judges - - -	-	-	-	-	-	-	-	4
Sub-collectors, head assistants, and assistant collectors -	-	-	-	-	-	-	-	7
Secretary to the Board of Revenue - - -	-	-	-	-	-	-	-	1
Under Secretary to Government - - -	-	-	-	-	-	-	-	1
Total - - -	-	-	-	-	-	-	-	15

Bombay.

Heads of districts	-	-	-	-	-	-	-	-	-	2
Judges	-	-	-	-	-	-	-	-	-	2
Joint judge	-	-	-	-	-	-	-	-	-	1
Assistant judges	-	-	-	-	-	-	-	-	-	2
Assistant collectors	-	-	-	-	-	-	-	-	-	9
Talukdari settlement officer	-	-	-	-	-	-	-	-	-	1
Registrar of the High Court	-	-	-	-	-	-	-	-	-	1
Total	-	-	-	-	-	-	-	-	-	18

Bengal.

Heads of districts	-	-	-	-	-	-	-	-	-	4
District judges	-	-	-	-	-	-	-	-	-	6
Joint and assistant magistrates	-	-	-	-	-	-	-	-	-	8
Secretary to the Board of Revenue	-	-	-	-	-	-	-	-	-	1
Under Secretary to Government	-	-	-	-	-	-	-	-	-	1
Total	-	-	-	-	-	-	-	-	-	20

North-western Provinces and Oudh.

Heads of districts	-	-	-	-	-	-	-	-	-	2
District and sessions judges	-	-	-	-	-	-	-	-	-	4
Joint and assistant magistrates	-	-	-	-	-	-	-	-	-	9
Junior Secretary, Board of Revenue	-	-	-	-	-	-	-	-	-	1
Assistant settlement officers	-	-	-	-	-	-	-	-	-	2
Assistant Director of Land Records and Agriculture	-	-	-	-	-	-	-	-	-	1
Small Cause Court judges, Allahabad and Lucknow	-	-	-	-	-	-	-	-	-	2
Total	-	-	-	-	-	-	-	-	-	21

Punjab.

Heads of districts	-	-	-	-	-	-	-	-	-	2
Divisional judges	-	-	-	-	-	-	-	-	-	2
District judges	-	-	-	-	-	-	-	-	-	2
Assistant commissioners	-	-	-	-	-	-	-	-	-	3
Junior Secretary to Financial Commissioner	-	-	-	-	-	-	-	-	-	1
Settlement collectorships	-	-	-	-	-	-	-	-	-	2
Total	-	-	-	-	-	-	-	-	-	12

4. Before passing orders as to the Central Provinces, his Excellency will await a further expression of Mr. MacDonnell's views on the question. And the Government of India is constrained to agree in the opinion expressed by successive chief commissioners of Assam, that that Province is not yet ripe for the admission of provincial officers to any of the reserved posts. It appears that the Provincial Service in Assam is largely recruited from Bengal and that it would be almost, if not quite, impossible, in view of the progress in education and the administrative aptitudes of the people, to find within any time which can now be foreseen an indigenous officer who could be utilised in one of these posts. Assam must therefore, like Burmah, for the present remain outside the scope of the present orders.

5. Dealing in the first instance only with the superior appointments, and reserving for the next paragraph the case of joint and assistant magistrates and collectors, the following are the rates of pay for officers of the Provincial Service in each grade, which the Secretary of State has sanctioned:—

JUDICIAL.

EXECUTIVE.

Madras.

	Rs.		Rs.
Judge, 1st grade	- 1,600	Collector, 1st grade	- 1,600
Judge, 2nd grade	- 1,200	Collector, 2nd grade	- 1,200
		Secretary to the Board of Revenue	- 1,000
		Under Secretary to Government	- 700

JUDICIAL.

EXECUTIVE.

Bombay.

	Rs.
Judge, 1st grade - - -	1,600
Judge, 2nd grade - - -	1,200
Judge, 3rd grade - - -	1,000
Joint judge - - -	800
1st grade assistant judge - -	600
2nd grade assistant judge - -	500
Registrar, High Court - - -	1,200

	Rs.
Magistrate and collector, 1st grade - -	1,600
Magistrate and collector, 2nd grade - -	1,200
Talukdari settlement officer - - -	800

Bengal.

	Rs.
District and sessions judge, 1st grade -	1,600
District and sessions judge, 2nd grade -	1,200

	Rs.
Magistrate and collector, 1st grade -	1,600
Magistrate and collector, 2nd grade -	1,200
Magistrate and collector, 3rd grade -	1,000
Secretary to the Board of Revenue -	1,200
Under Secretary to Government - -	700

North-western Provinces and Oudh.

	Rs.
District and sessions judge, 1st grade -	2,000
District and sessions judge, 2nd grade -	1,600
District and sessions judge, 3rd grade -	1,200
District and sessions judge, 4th grade -	1,000
Small Cause Court judge - - -	800-1,000

	Rs.
Magistrate and collector, 1st grade -	1,600
Magistrate and collector, 2nd grade -	1,200
Magistrate and collector, 3rd grade -	1,000
Junior Secretary, Board of Revenue, grade pay, plus - - -	150
Assistant settlement officer, 1st grade -	700
Assistant settlement officer, 2nd grade -	500
Assistant Director, Department of Land Records and Agriculture - - -	400-500

Punjab.

	Rs.
Divisional judge, 1st grade - - -	1,600
Divisional judge, 2nd grade - - -	1,400
Divisional judge, 3rd grade - - -	1,200
District judge, 1st grade - - -	1,000
District judge, 2nd grade - - -	800

	Rs.
Deputy commissioner, 1st grade -	1,600
Deputy commissioner, 2nd grade -	1,200
Deputy commissioner, 3rd grade -	1,000
Settlement collector, 1st grade -	1,000
Settlement collector, 2nd grade -	800
Junior Secretary to Financial Commissioner - - -	600

These rates of pay will, of course, be liable to alteration at any time should the interests of the public service require it.

6. The Government of India have determined, with the approval of the Secretary of State, to amalgamate the scheduled posts on the executive side subordinate to the headship of a district, with the existing grades of deputy magistrates and collectors

These posts are the following:—

Madras - - - - -	7
Bombay - - - - -	9
Bengal - - - - -	8
North-western Provinces and Oudh - - - - -	9
Punjab - - - - -	3

In all these Provinces the majority of them are at present held by statutory civilians appointed under the Rules of 1879, while in some they are still occupied by officers of the Civil Service of India or Commissions appointed before 1882. Until these statutory civil servants are provided for, either by promotion or by amalgamation with the new Provincial Service, the posts which they hold cannot be thrown into the general *cadre* of the latter service; but when that happens, and when the prior claims of officers of the Civil Service of India and Commissions have been satisfied, the posts now specified should be distributed as follows among the existing grades of deputy magistrates and collectors and extra assistant commissioners:—

Madras.

	Rs.
2 posts in the 1st grade on - - - (Corresponding to sub-collector.)	700
4 posts in the 3rd grade on - - - (Corresponding to head assistant.)	500
1 post in the 5th grade on - - - (Corresponding to passed assistant.)	300

Bengal.

	Rs.
2 posts in the 3rd grade on - - - (Corresponding to joint magistrate, 1st grade.)	600
2 posts in the 4th grade on - - - (Corresponding to joint magistrate, 2nd grade.)	500
2 posts in the 5th grade on - - -	400
2 posts in the 6th grade on - - - (Corresponding to assistant magistrates on Rs. 500 and Rs. 450 respectively.)	300

<i>Bombay.</i>		<i>Punjab.</i>	
	Rs.		
3 posts in the 3rd grade on (Corresponding to first assistant.)	- 600	1 post of extra assistant commissioner, 3rd grade on	- 600
4 posts in the 4th grade on (Corresponding to second assistant.)	- 500	(Corresponding to assistant commissioner, 2nd grade).	
2 posts in the 6th grade on (Corresponding to passed assistant.)	- 300	4 post of extra assistant commissioner, 5th grade on	- 400
		Corresponding to assistant commissioner, 2nd grade.)	
<i>North-western Provinces and Oudh.</i>		1 post of extra assistant commissioner, 6th grade on	- 300
	Rs.	(Corresponding to assistant commissioner, 3rd grade.)	
4 posts in the 5th grade on (Corresponding to joint magistrates and assistant commissioners, 1st grade.)	- 600		
5 posts in the 3rd grade on (Corresponding to joint magistrates and assistant commissioners, 2nd grade.)	- 400		

7. The addition of these posts to the *cadre* of the Provincial Service will necessitate recruitment in the lower grades to supply the place of those who will be moved up to fill them; and this can take place at once where the condition of the service demands it. Those statutory civilians who were appointed in the various Provinces in 1889 and 1890, on the understanding that they would be transferred to the Provincial Service when it was constituted, should now be gazetted to their appropriate places in that service. In accordance with the decision of the Secretary of State they will, like other statutory civil servants who join the Provincial Service, be understood to have a preferential claim for promotion to the scheduled posts (subject, of course, to the special claims of members of the Civil Service of India and officers of the Commissions appointed before 1882) over the other members of that service.

8. The Statutory Rules of 1879 now require the approval and sanction of Governor General in Council to all nominations made by local governments. These nominations are at present ordinarily to offices in the subordinate ranks of the Covenanted Civil Service. The subordinate posts included in the list being thrown open to the Provincial Service the Local Government will no longer require the sanction of the Government of India to appointments to them. His Excellency in Council, however, thinks that for the present it will be necessary to retain the rule requiring such sanction in the case of appointments (whether permanent or officiating for a period exceeding three months) under the Statute to headships of districts and district judgeships in Madras, Bombay, Bengal, and the North-western Provinces and Oudh, and to headships of districts, divisional judgeships and settlement collectorships in the Punjab. He is willing that in the case of all other scheduled appointments the Local Government should nominate without reference to him. He is also willing that in the case of officiating appointments of provincial officers for short vacancies not exceeding three months at a time, to headships of districts and the other posts mentioned above, such reference should be dispensed with. Such short vacancies will afford the means of testing an officer's fitness for more extended employment in those posts; and in reporting for sanction nominations for longer periods it should always be stated whether an officer has been tried in this manner, and with what result. As a general rule the Governor General in Council thinks that it will be prudent to take every suitable opportunity of thus ascertaining an officer's capacity before proposing to employ him permanently in these important and responsible posts. His Excellency in Council also desires to correct the impression which appears to have prevailed in some quarters, that it will be necessary for a provincial civil servant to go through the whole succession of subordinate grades in the Executive or Judicial Service before he can be selected for a scheduled post. On the contrary, it will always be desirable to select persons for higher executive office who, while they have given proof of distinguished ability by sufficiently long service, are still comparatively young, and possess that bodily activity which is a *sine quâ non* for such employment. Every appointment of the kind must be based wholly upon fitness and merit, seniority being regarded only when the claims of two or more officers who are equally fit come into competition. Nor does the Governor General in Council intend that selection should be less absolute, or more restricted to the higher grades of the Provincial Service in the case of judicial appointments. It has been too much the custom to regard promotion from grade to grade of the Subordinate Executive and Judicial Services as a mere matter of seniority; and it should be made publicly known that every Government and Administration deserves liberty to make promotions in these grades without regard to seniority.

9. In Appendix A. attached to this resolution will be found an example of the form in which the Government of India think that the list of appointments open to the Provincial Service should be published by the Local Government. Each Local Government should frame and issue its list accordingly. In the Quarterly Provincial Civil List this form should, with the omission of the last paragraph, be prefixed to that division of the list which exhibits the appointments held by members of the Provincial Service. In lieu of the last paragraph a note should be entered in the list of subordinate offices, against each grade to which additions have been made, referring to the notification, and stating that "To this grade appointments have been added as representing the same number of appointments of the Civil Service," now treated as open to

10. The Government of India recently directed that each statutory civilian appointed before the close of 1889 might be called upon to choose whether he would retain his present position, or be transferred to the Provincial Service with an acknowledgment of his preferential claims to promotion to scheduled appointments before other members of the Provincial Service. As regards Bengal, Madras, the North-western Provinces and Central Provinces, only one statutory civilian has elected to enter the Provincial Service. In Bombay and the Punjab they have not yet made their election. But as it is not improbable that some obscurity may still remain in the minds of the officers who were called upon to make their election, in regard to the advantages and disadvantages to them of the transfer, a further opportunity ought to be afforded these gentlemen of reconsidering the decision at which they have provisionally arrived. The Governor General in Council will address local governments and administrations again on this subject in a separate communication.

11. The present Uncovenanted Service Leave and Pension Rules, or in other words, the provisions of Part III., Chapter XIV., of the Civil Service Regulations, regarding leave, and of Part IV., Chapters XV. to XIX., regarding pension, will be applied to the Provincial Service. But the present statutory civilians, whether they enter that service or not, will continue to be governed by the Leave and Pension Rules now applicable to them.

12. After considering the suggestions made by the local governments and administrations, the Governor General in Council has prepared a revised draft of rules for the appointment of natives of India to offices reserved under the Statute of 1861, which will be submitted in due course for the sanction of the Secretary of State for India in Council, and if approved by him will be published for general information.

13. As regards the rules for admission to the Provincial Service in each Province, and the precise place where the line should be drawn between the Provincial and Subordinate Services, the Government of India propose to address the local governments and administrations separately, as there are great differences in the circumstances of the several Provinces and the classes from which the local officials must be drawn.

ORDER.—Ordered, that this resolution be communicated to local governments and administrations, and that it be published in the "Gazette of India" for general information.

[True Extract.]

C. J. LYALL,
Secretary to the Government of India.

APPENDIX A.

(Referred to in Paragraph 9 of preceding Resolution.)

With the previous sanction of the Governor General in Council, the Governor in Council is pleased to notify that the following appointments in the Madras Presidency, to fill which members of the Civil Service of India have hitherto been recruited, shall be appointments to which members of the Madras Civil Service can properly be appointed, subject to the rules for the time being in force under 33 Vict. c. 3 s. 6 :—

- 4 posts of district and session judge.
- 2 posts of collector and magistrate of a district.
- 1 post of Secretary to the Board of Revenue.
- 1 post of Under Secretary to Government.

2. When these posts are held by members of the Madras Civil Service their pay shall be as follows :—

	Rs.
District and Sessions Judge—	
If in the 1st grade - - - - -	1,600
If in the 2nd grade - - - - -	1,200
Collector and Magistrate—	
If in the 1st grade - - - - -	1,600
If in the 2nd grade - - - - -	1,200
Secretary to the Board of Revenue - - - - -	1,000
Under Secretary to Government - - - - -	700

3. In addition to these appointments the following appointments, for which recruitment has hitherto been made in the Civil Service of India, have been thrown open to the Madras Civil Service and added to the existing grades of that service :—

	Rs.
2 posts of sub-collector and joint magistrate - - - - -	700
4 posts of head assistant to the collector and magistrate - - - - -	
1 post of assistant collector and magistrate - - - - -	500
	300

converted into

2 posts of deputy magistrate and collector, 1st grade, on - - - - -	700
4 posts of deputy magistrate and collector, 3rd grade, on - - - - -	500
1 post of deputy magistrate and collector, 5th grade, on - - - - -	300

APPENDIX IV.

No. $\frac{7}{47-49}$.

EXTRACT from the PROCEEDINGS of the GOVERNMENT OF INDIA in the HOME DEPARTMENT (Public), under date Calcutta, the 7th January 1893.

READ—

- Home Department Resolution, dated the 21st April 1892, conveying the orders of the Government of India on the proposals of the Public Service Commission in regard to the constitution of the Provincial (Executive and Judicial) Services.
- Letter to the Chief Commissioner, Central Provinces, No. 1539, dated the 27th May 1892, conveying the orders of the Government of India on certain points in connexion with the constitution of the Provincial Service in the Central Provinces.
- Letter from the Chief Commissioner, Central Provinces, No. 3567, dated the 28th May 1892 offering his views on the subject of the constitution of the Provincial Service in those Provinces.
- Letter from the Chief Commissioner, Central Provinces, No. 3965, dated the 13th June 1892, on the same subject.
- The Despatch of the Government of India, to the Secretary of State, No. 62, dated the 13th September 1892, stating the conclusions arrived at by the Government of India on the subject.
- The reply of the Secretary of State, No. 111, dated the 17th November 1892, concurring in the conclusions set forth by the Government of India.

RESOLUTION.

In paragraph 4 of the Home Department Resolution of the 21st April last, cited in the preamble, enumerating the appointments in the different Provinces which should, for the present, be entered in the list as open to the Provincial Service, it was stated that, before passing orders as to the Central Provinces, his Excellency would await a further expression of Mr. MacDonnell's views on the question. After carefully considering the Chief Commissioner's suggestions, the Governor General in Council has now, with the approval of the Secretary of State, determined that the following posts in those Provinces shall, for the present, be placed on the list of appointments open to the Provincial service :—

Head of district	-	-	-	-	-	-	1
Small Cause Court judges	-	-	-	-	-	-	2
Registrar, Judicial Commissioner's Court	-	-	-	-	-	-	1
Assistant to settlement commissioner	-	-	-	-	-	-	1
Assistant commissioners	-	-	-	-	-	-	2
							—
							7
							—

2. The rates of pay fixed for officers of the Provincial Service holding the headship of a district and the Small Cause Court judgements are as follows :—

		Rs.
Deputy commissioner	-	- { 1,600 for the 1st grade.
		- { 1,200 „ 2nd „
		- { 1,000 „ 3rd „
Small Cause Court judges	-	- { 800
		- { 700

But these rates of pay will be liable to alteration at any time should the interests of the public service require it.

The Governor General in Council has decided, with the approval of the Secretary of State, to amalgamate the remaining appointments with the existing grades of extra assistant commissioners. They will be distributed as follows among these grades, when the prior claims of the existing statutory civilians and of the officers of the Indian Civil Service or the Commission have, as explained in paragraph 6 of the resolution of 21st April 1892, been satisfied :—

	Rs.
1 post in the 2nd grade (corresponding to assistant commissioner, 1st class)	600
1 post in the 3rd grade (corresponding to assistant commissioner, 2nd class)	500
1 post in the 4th grade (corresponding to assistant commissioner, 3rd class)	400
1 post in the 5th grade (corresponding to assistant commissioner, 4th class)	300

A local allowance of Rs. 100 will be attached to the office of Registrar of the Judicial Commissioner's Court, and to that of assistant to the settlement commissioner, when held by officers of the Provincial Service.

ORDER.—Ordered, that this resolution be communicated to the Chief Commissioner, Central Provinces, that a copy, with copy of the Despatch from the Secretary of State, No. 111, dated the 17th November 1892, be forwarded to the Department of Finance, and that it be published in the "Gazette of India" for general information.

[True extract.]

C. J. LYALL,
Secretary to the Government of India.

APPENDIX V.

Nos. ²¹₇₄₆₋₇₅₃, dated Simla, the 18th April 1879.

From C. BERNARD, Esq., C.S.I., Officiating Secretary to the Government of India, Home Department, to LOCAL GOVERNMENTS and ADMINISTRATIONS in the BENGAL PRESIDENCY.

On the 16th February 1872 was published in the "Gazette of India" correspondence, in which Her Majesty's Government had directed—

- (1.) That offices to which it is desirable to appoint persons not natives of India should be, as far as practicable, filled from the ranks of the Covenanted Civil Service or from the Staff Corps;
- (2.) That so far as may be possible and consistent with the requirements of the public service, all offices, other than those reserved for the Covenanted Civil Service, and those for which technical or professional qualifications are desirable, should be held by natives of India; and
- (3.) That, as a rule, persons with special qualifications, not being natives of India, should be engaged at home, through Her Majesty's Secretary of State, for such branches of the service as the Educational or the Public Works Department, and should not be enlisted in India.

2. Those orders have been in the main obeyed. But still from time to time Europeans have been appointed to posts for which natives are eligible; and the Governor General in Council deems it necessary to lay down a somewhat stricter rule, and to distinguish the branches of the service which should be, as far as possible, reserved for natives of India. It may be well to cite here the definition of "Natives of India" framed by Act of Parliament: Section 6 of 33 Victoria, chapter 3, says—"For the purposes of this Act, the words 'Natives of India' shall include any person born and domiciled within the dominions of Her Majesty in India, of parents habitually resident in India, and not established there for temporary purposes only." The section goes on to say that "it shall be lawful for the Governor General in Council to define and limit from time to time the qualification of natives of India thus expressed: provided," &c. For the purposes of the present orders, the foregoing definition of "Natives of India" is adopted, with the proviso that "persons born and domiciled," &c. within the territories of Indian Princes tributary to, or in alliance with, Her Majesty, shall also be considered to be "Natives of India."

3. For the future, no persons, other than a native of India, shall be appointed to an office carrying a salary of Rs. 200 a month or upwards without the previous sanction of the Governor General in Council in each case, unless the proposed appointment falls under one or other of the following conditions, namely:—

- (a.) That the person to be appointed belongs to the Covenanted Civil Service, or to the Staff Corps;
- (b.) That the person to be appointed was originally nominated to the—
 - (1.) Financial Department, by the Governor General after examination;
 - (2.) Forest Department, by the Secretary of State, or by the Governor General after examination; or
 - (3.) Educational Department, by the Secretary of State;
- (c.) That the person to be appointed enter the branch of the department, in which he is now to be promoted, before the 1st January 1879;
- (d.) That the office to which appointment is to be made belongs to—
 - (1.) The Opium Department;
 - (2.) The Salt or Customs Department;
 - (3.) The Survey Department;
 - (4.) The Mint Department;
 - (5.) The Public Works Department; or
 - (6.) The Police Department.

4. No person, other than a member of the Covenanted Civil Service, shall be appointed for the first time to any office, which is usually reserved for the members of that service, without the previous sanction of the Governor General in Council. For the appointment of natives to such posts regulations will, with the sanction of Her Majesty's Secretary of State, shortly be issued.

5. When sanction is sought to a proposed appointment under either of the two foregoing paragraphs, the application for such sanction should show—

- (a.) the education and past history of the person whom it is proposed to appoint; and
- (b.) the reason why a native of India (or, in the case of appointments under paragraph 4, a member of the Covenanted Civil Service) cannot conveniently be appointed to the vacant office.

6. Though the six departments named under clause (d.) of paragraph 3 above are excluded from the operation of the present orders, the Governor General in Council does not wish that offices in these departments should be in any way reserved for Europeans. The duties of the Opium and Customs Departments are not more technical or arduous than those of the land revenue and settlements branches of the service, wherein natives of India do excellent work. Men of the same race as Colonel Montgomerie's native trans-Himalayan explorers can surely be entrusted with responsible offices in the survey of the plains of India. The Governor General in Council has been glad to see that, in one most important branch of the Public Works Department of Bengal, the Lieutenant-Governor has decided that native engineers should be employed much more largely than heretofore. The annual police reports for the various Provinces show that native police officers when advanced to positions of trust do their work zealously and honestly. And the Governor General in Council hopes that it may be possible to appoint natives of India more and more freely to the higher offices in these departments. But for the present his Excellency in Council is not prepared to take special steps for restricting the employment of Europeans in the six departments mentioned at clause (d.) above.

Nos. 754 to 759.

COPY forwarded to the several DEPARTMENTS of the GOVERNMENT of INDIA for information.

No. 29, dated Simla, the 24th April 1879.

From the GOVERNMENT OF INDIA to HER MAJESTY'S SECRETARY OF STATE FOR INDIA.

We have recently had under consideration the best means of securing that full effect be given to the orders of Her Majesty's Government on the subject of—

- (1.) appointing natives of India to an increasing majority of higher offices in the Uncovenanted Service; and
- (2.) reserving the offices to which it is not desirable to appoint natives of India, as far as practicable, for covenanted civil servants, officers of the Staff Corps, or persons appointed by the Home Government.

2. The series of Despatches which ended with your predecessor's Despatch, No. 451, dated 6th December 1871, were circulated to the several local governments for their guidance in the year 1872.

* Government of India's Despatch, No. 35, dated 2nd May 1878.
 Secretary of State's reply, No. 125, dated 7th November 1878.

fore, no necessity for further delay

† Nos. 21—746 to 753, dated 18th April 1879.

We have recently been awaiting your Lordship's instructions on our proposals regarding the native Civil Service* before issuing further orders in the matter. We have now received an expression of your views on that important question. There is, therefore, no necessity for further delay in enforcing the instructions of Her Majesty's Government, to which we have above adverted. And we have issued the enclosed circular † instructions to the Governments and Administrations of the Bengal Presidency. We consider it would be advisable that similar instructions should be issued to the Governments of Madras and Bombay. But on this point we solicit your Lordship's orders.

3. It will be seen that the Police, Customs, and Opium Departments are the chief civil departments of the service to which the local governments will, under our proposed orders, be able to appoint Europeans to important offices without the previous sanction of the Governor General in Council. We do not wish in any way to prevent or discourage the appointment of natives of India to high posts in these departments; but, for the present, we do not feel able to take special steps for excluding Europeans from employment in these departments.

No. 66 (Public), dated India Office, London, the 10th July 1879.

From HER MAJESTY'S SECRETARY OF STATE FOR INDIA to his Excellency the Right Honourable the GOVERNOR GENERAL OF INDIA IN COUNCIL.

I have considered in Council the Despatch of your Excellency in Council, dated 24th April last, No. 29, forwarding circular instructions which you have issued to the Governments and Administrations of the Bengal Presidency, with the view of giving effect to the orders of Her Majesty's Government that natives of India should be appointed to an increasing majority of higher offices in the Uncovenanted Service, and that the offices to which it is not desirable to appoint natives should be reserved, as far as practicable, for covenanted civil servants, officers of the Staff Corps, or persons appointed by the Home Government.

2. You state that, although you do not wish to present or discourage the appointment of natives to high posts in the Police, Customs, and Opium Departments, you do not for the present feel able to exclude Europeans from employment in these departments.

3. I cordially approve the instructions you have issued in the Bengal Presidency, which will, it may be expected, if carefully observed, lead to the appointment of natives of India to fill a larger number of the higher posts in the Uncovenanted Service, and I have issued corresponding instructions to the Governments of Madras and Bombay, of which I enclose a copy.

Nos. 7 and 9, dated India Office, London, the 10th July 1879.

From HER MAJESTY'S SECRETARY OF STATE FOR INDIA to his Excellency the Honourable the GOVERNOR IN COUNCIL, Bombay, and to his Excellency the Most Noble the GOVERNOR IN COUNCIL, Madras.

I forward herewith, for your information and guidance, a copy of a circular which has been issued by the Government of India to the Governments and Administrations of the Bengal Presidency, containing instructions on the subject of appointing natives of India to an increasing majority of higher offices in the Uncovenanted Service, and of reserving the offices to which it is not desirable to appoint natives of India, as far as is practicable, for covenanted civil servants, officers of the Staff Corps, or persons appointed by the Home Government.

2. I request that the principles laid down in this circular may be applied also in the ^{Madras} ^{Bombay} Presidency, and that, with the exceptions therein contained, no person, other than a native of India, may in future be appointed to an office carrying a salary of Rs. 200 a month or upwards unless the sanction of the Secretary of State in Council to such appointment shall have been previously obtained.

APPENDIX VI.

EXTRACT para. 60 of the REPORT of the PUBLIC SERVICE COMMISSION, 1886-87.

60. *Points of Inquiry: View likely to be taken by the Native Community regarding Competition in India: Advantages and Disadvantages of such a System.*—Of all the matters which have been referred for the consideration of the Commission, there is perhaps none which is more important in itself, and to which greater importance is attached by the educated classes, than the introduction of a competitive examination in India for the Civil Service, to be held simultaneously with the competition in England, the examinations being identical in all respects. The evidence tendered before the Commission on this point may, broadly speaking, be divided under two heads, namely, (1) that given by witnesses belonging to those classes which have made the greatest progress in education and (2) that given by others who feel that, in the present circumstances of the country, important classes of the community are practically debarred from success in examinations designed mainly as tests of educational qualification. Under the first may be included the majority of the witnesses who belong in Northern, Central, and Southern India to the Hindu community, and in Western India partly to that community and partly to the Parsis. Under the second may be included the majority of the witnesses belonging to the Muhammadan community and to classes whose educational progress has, for various reasons, been retarded. Such being the nature of the evidence tendered before the Commission, it is obviously impossible to say that any common view in regard to competitive selection in India is held by the native community.

Briefly stated, the arguments usually advanced by those who favour the plan of a competitive examination in India, are that the introduction of some such system is necessary to remove obstacles which at present preclude natives of India from competing on terms of equality with British-born subjects of Her Majesty, and that the interposition of such obstacles is inconsistent with the Statute of 1883 and the Queen's Proclamation of 1858. In the first place, there are religious and caste objections, to which the Commission will hereafter refer, which debar members of certain classes from crossing the sea. But even when those objections do not exist it is argued with much force that Indian parents are naturally reluctant to send their children at a comparatively early age to a distant country, where they are exposed to many temptations, and where sufficient supervision may not be exercised over them; and it is still more strongly insisted that considerations of expense deter many native youths from appearing as candidates at the examination in England, especially in view of the risk of failure, which, under the conditions of the English examination, must always be great in the case of Indian candidates. These difficulties, it is said, deter many of the best natives of India from seeking entrance to the Covenanted Civil Service, and practically have the effect of a race disqualification.

On the other hand, it is argued that, in the present circumstances of social life in India, open competition in that country would not justify, to the same extent as similar competition in England, the presumption that the successful candidates would possess in a sufficient degree the qualities essential for high administrative office; that Indian schools and colleges do not at the present time supply an education and training of the high and liberal kind considered to be a necessary qualification for admission to the Indian Civil Service, and that an open competition in India for the Covenanted Civil Service would operate with inequality, excluding altogether some important classes of the community, while giving undue advantages to others. It is further argued that it could scarcely fail,

—in view, on the one hand, of the large number of candidates who would offer themselves for examination, and, on the other hand, of the small number who could, under any circumstances, be successful, to create a large disappointed, and thereby probably discontented class, which would cause considerable embarrassment to the Government. Doubts have been also expressed whether pressure would not sooner or later be brought to bear on the Government with a view to make the examination of a less English and a more oriental character, and to adjust it on terms more favourable to native candidates. Again, some witnesses have referred to the injurious effect which, in their opinion, would be exercised upon the development of education in this country by an open competition for the Civil Service. It is urged that, in view of the value of the prizes offered, such an examination would be followed by the creation of private establishments for the main, if not the sole, purpose of offering special preparation to intending candidates, while the regular educational institutions would scarcely be able to resist the temptation of so shaping the course of their study as to secure success at the Indian examination rather than to impart a general liberal education to the mass of their scholars. Some witnesses, indeed, have expressed the opinion that the effect of unqualified competition in India on general education would be so disastrous as to constitute a national evil of great ultimate importance. There are two other objections taken to the establishment in India of competitive examinations for the Civil Service to which it is necessary to refer, namely, the difficulty which would be experienced in maintaining the secrecy of the examination papers, and in making satisfactory arrangements for that portion of the examination which is conducted *viva voce*. It is said that experience in connexion with examinations in India has shown very real difficulties to exist under the former of these heads, which, if not actually insurmountable, are at all events sufficient to suggest the necessity for the greatest caution. As regards the *viva voce* examination, it is contended that it would be impossible to secure either uniformity of test or the high standard exacted in England if the work were undertaken by the professional staff available in India.

On a full consideration of the evidence before it, the Commission has come to the conclusion that it is inexpedient to hold an examination in India for the Covenanted Civil Service simultaneously with the examination in London. With regard to the bearing of the Statute of 1833 and the Proclamation of 1858 on the question, the Commission is of opinion that the provisions of the Statute and the declarations embodied in the Proclamation are not affected by the place of examination. The question is simply one as to the qualifications required and the arrangements under which officers possessing such qualifications can best be secured. The object of the Government of India in recruiting in England a limited staff of officers, who after a training in India might be entrusted with the more important executive and judicial charges, was (*inter alia*) to secure an administration conducted so far as possible on principles and by methods in harmony with modern civilization. The circumstances of India rendered it necessary that, save in exceptional instances, officers with an education which promised the possession of the qualities necessary to achieve this result, should be obtained in England; and from the time the competitive system was introduced, it has been understood that the examination was to bear a distinctively English character, and to constitute a test of English qualifications. The most natural arrangement, therefore, was that the examination should be held in England, as being the centre of the educational system on which it was based. This conclusion appears to the Commission to be right. In order to attract to its service youths whose talents entitled them to aspire to the substantial rewards of political or professional life in England, it was necessary for the Government to offer compensation for the prospects surrendered in the form of liberal salaries. It has been justly objected that the emoluments of these officers entail a serious charge on the Indian revenues, and that the financial interest of the State require that the recruitment in England should be curtailed and an indigenous agency substituted, where and in so far as the social and political progress of India renders it possible. Of those who advocate a contemporaneous examination in India, the majority are willing to allow that, in order to secure progress, it is for the present necessary that the administration should be conducted by the same methods and on the same principles as in the past, and that the higher offices of the administration must in the main be held by officers of English education. By limiting the recruitment in England to such strength only as is required to fill the highest and leaven the upper ranks of the service, an opportunity of advancement to places of trust and responsibility is afforded to those whose scruples debar them from the competition in England, while the expenditure incurred in recruiting Indian talent at the rates necessary to attract qualified English agency is avoided. In regard to the character of the education supplied by schools and colleges in India, the Commission concurs with those witnesses who consider that these institutions, which are of comparatively recent growth, cannot at present be relied upon to supply a general education of the high and liberal kind contemplated as a necessary qualification for admission to the Indian Civil Service. Whether within any reasonable time the educational conditions prevalent in India may attain a degree of development which would justify simultaneous examinations in India for the Covenanted Civil Service, the Commission is unable, from any evidence before it to form an opinion. But it considers that such an arrangement could not be made at present without injury to the public interests and the substitution of qualifications of a different kind from those now required. The Commission is further of opinion that for the present and for some time to come inequality of a more marked kind than any that can at present be reasonably complained of would result from an open competition for the Covenanted Civil Service if held in India. The general correctness of this conclusion appears to be borne out by the statistics given in the tables attached to this Report as Appendix M. These statistics show the principal classes of the community to which the students belong, who have, during recent years, passed certain University examinations in India; the particular castes to which the successful Hindu candidates belong in the case of the Madras University (from which University alone the necessary information

under this head could be procured) and the number of successful and unsuccessful candidates at certain Arts examinations held at the Indian Universities since those institutions were established in 1864.

In regard to the injurious effects which, in the opinion of some witnesses, would be exercised upon the development of education in this country by a competitive examination for the Civil Service if held in India, the Commission would refer to the fact that the tendency indicated has been felt as an evil even in England, where the institutions for higher education are numerous enough to admit of the easy application of counterbalancing checks. In India, on the other hand, one of the chief difficulties experienced is that of making the students appreciate the value of education for itself, and some authorities complain that the system of "cramming" already prevails to a pernicious extent.

Lastly, the Commission attaches much importance to that part of the examination which is conducted *vivâ voce*. When the conduct of the competitive examination in England was made over to the Civil Service Commissioners in 1858, the Commissioners applied the *vivâ voce* test, not only to English, Greek, and Latin, with reference to which subjects alone it had been used in the preceding years, but also to all other subjects; and they wrote,* "we have every reason to believe that the alteration has been a beneficial one." In a later Report† the Commissioners observed: "In each subject there is a *vivâ voce* examination, to which we attach great importance, introduced for the express purpose of fully testing the genuine character of a candidate's knowledge, in addition to calling into play those qualities which are little, if at all, elicited in an examination by written papers, viz., his readiness, self-reliance, and moral courage." These views meet with the general concurrence of the Commission. The *vivâ voce* examination enables a skilful and experienced examiner to ascertain whether the written answers of a candidate represent the results rather of a highly cultivated memory than of a thorough comprehension of the subjects he has studied. At the same time it tests the possession by candidates of other qualities of considerable importance to persons who aspire to enter the Indian Civil Service. Moreover, in certain subjects—for instance, the Natural Science group—a *vivâ voce* examination could not be abandoned without seriously diminishing the value of the tests applied. On this subject generally the Commission concurs in the‡ remarks made in 1858 to the Secretary of State by the Civil Service Commissioners when discussing the regulations to be framed under the provisions of section 32 of the Statute 21 & 22 Vict. c. 106.:—"Regard being had to the peculiar position of Indian Civil Servants and the magnitude of the interests committed to their charge, it may be said, without exaggeration, that errors of principle in the selection of those officers, whether arising from imperfect knowledge or partial views, might lead to results, the full evil of which would not be discovered until much irremediable mischief had been occasioned."

In deciding against the adoption of competition in India for the Covenanted Civil Service, the Commission is far from advocating the interposition of any unnecessary obstacles to the competition of any class of Her Majesty's subjects at the examination for the Indian Civil Service held in England. The object of the Commission is to make such recommendations as it considers calculated to secure the most efficient class of public servants and, consistently with this paramount condition, to do full justice to the claims of natives of India to higher and more extensive employment in the public service. It believes that natives of India who undergo English training and show the degree of enterprise, strength of character, and other qualities, without which success can scarcely be expected in the English examination, are to be welcomed as suitable recruits for the Covenanted Civil Service. But it cannot recommend any alteration of the condition attached to the English examination merely to facilitate the entry of any one qualified class of Her Majesty's subjects more than another to the Indian Civil Service. Holding, as it does, an opinion adverse to the introduction of a competitive examination in India for the Covenanted Civil Service, the Commission is unable to answer the inquiries put to it as to the incidents which should attach to such an examination.

The members of the Commission named in the margin do not share in the apprehensions expressed above as to the probable result of the introduction of an examination in India for the Covenanted Civil Service simultaneous with the examination in England; and they wish it to be noted that they have not deemed it necessary either to state at length the arguments in support of the view they have taken or to meet the objections raised against it, as the scheme§ which is now unanimously recommended by the Commission is, in their opinion, well calculated to secure the end they have in view, and at the same time is not open to the objections urged against simultaneous examinations.

The Honourable Romesh Chunder Mitter,
B.L.

M. E. Ry. Salem Ramaswami Mudali-
yar, B.L.

Rao Bahadur Krishnaji Lukshman
Nulkar.

* Fourth Report of Her Majesty's Civil Service Commissioners, page 26.

† Tenth Report of Her Majesty's Civil Service Commissioners, page 6.

‡ Fourth Report of Her Majesty's Civil Service Commissioners, page 227.

§ See Chapters VII. and VIII. of the Report.

DESPATCH from the SECRETARY OF STATE FOR INDIA IN COUNCIL to his Excellency the Right Hon. the GOVERNOR GENERAL OF INDIA IN COUNCIL.—No. 37, Public, dated India Office, London, 19th April 1894.

My Lord,

I have considered in Council the letter from your Government, No. 62, Public, dated 1st November 1893, reporting, in accordance with my predecessor's instructions, as to the mode in which, and the conditions and limitation under which, it would be possible to give effect to the resolution of the House of Commons, upon the holding of simultaneous examinations in England and in India for the Indian Civil Service. This question which your Government had regarded as set at rest by the report made by the Public Service Commission in December 1887, and by the constitution of the new Provincial Services in pursuance of that Commission's recommendations, has now been very fully and carefully discussed afresh, both by the local governments and in your letter under reply.

2. In 1870, by the Statute 33 Vict. c. 3. s. 6, it was provided that, subject to such rules as might be made with the sanction of the Secretary of State, natives of India might be appointed to any of the offices reserved under the Act of 1861 for members of the Civil Service. The object of this provision was, at the time of its enactment, declared to be to facilitate the appointment of natives of India of proved merit and ability to any high public employment for which they might be fitted by their qualifications. The Act in fact indicated and contained in itself the remedy which Parliament after full deliberation considered most appropriate for any disadvantages entailed on natives of India by reason of the examinations for entrance into the Civil Service being held only in London. A prolonged inquiry ensued as to the best mode of applying the remedy thus devised, and it was not until 1879 that rules were promulgated, inaugurating what has been popularly known as the Statutory Service. The appointments made under those rules failed to give satisfaction, and in 1886 a Commission of 15 members was directed to investigate the whole subject. One of the principal issues referred to this Commission was whether there should be an examination in India similar to that held annually in London, and a large number of witnesses were examined regarding the advantages and disadvantages of introducing such a system. On a full consideration of all the evidence the Commission, which contained six native members, came unanimously to the conclusion that "it is inexpedient to hold an examination in India for the Covenanted Civil Service simultaneously with the examination in London." Three of the native members did not altogether accept the reasons which had led their colleagues to this conclusion, but they nevertheless concurred in the report, because they considered that the general scheme which had been recommended was "well calculated to secure the end which they had in view."

3. To the general scheme thus unanimously recommended substantial effect has now been given, although not in the precise shape formulated by the Commissioners. It has been deemed preferable to adhere to the procedure laid down in the Act of 1870, and to provide by means of rules that, at the discretion of the local government, any particular proportion or number of any of the offices reserved for the Civil Service may be entered in a list as open to the newly created Provincial Service. Accordingly such a list has been prepared for each Province, and rules have been framed and issued under the sanction of the Secretary of State, by which the local governments are empowered to bestow any of the reserved posts so "listed" upon natives of India, being members of the Provincial Service. And not only has this power been conferred; steps have been taken by which the local governments will be obliged to fill one-sixth of the reserved offices by members of the Provincial Service, when the claims of the natives holding appointments under the Statutory Rules of 1879 have been satisfied. The number of officers annually recruited in England by examination has for several years been reduced by one-sixth, and will only suffice to fill five-sixths of the reserved appointments.

4. As is pointed out in the letter under reply, the present lists of appointments for which officers promoted from the newly organised Provincial Service are eligible have been prepared with reference only to proximate possibilities, and do not include more posts than those which the local governments expect to find provincial candidates qualified to occupy as soon as such posts become available. The Indian Civil Service contains 898 posts, of which 74 are in special or technical departments, not concerned with the general administration of the country. In most of these departments, the

chief exception being the Political Department, which deals with native states and frontier tribes, the number of covenanted civilians is small, and of the remaining 824 posts all are not held by covenanted civilians. The lists already published of posts tenable by officers promoted from the Provincial Service contain 93, or over 15 per cent., of the 612 offices, for which alone provincial officers can at present be regarded as ordinarily qualified. In arriving at this number, the Provinces of Burma and Assam are excluded from consideration, as also are the posts in the Punjab Commission reserved for military officers, and those high offices specified in paragraph 4 of your memorandum, but it is understood that, in the event of any Provincial officer being found qualified for one of these higher offices, it is your intention to proceed under the special provisions of section 3 of the Statute of 1861. A full one-sixth of 612 posts would give only a slightly larger per-centage (16.66) than that already conceded. In these calculations no account is taken of such natives of India as may succeed at the open competition in England; and it should be remembered that in 1884 Lord Ripon's Government wrote that, as the proportion of natives admitted under the Statutory Rules was one-sixth of the whole recruitment of the year, and as a certain number do from time to time obtain appointments through the open competition, "in fixing a per-centage of the whole recruitment to be at once reserved for natives we feel bound to recognise the effect of this double mode of admission, and, on a scrutiny of the results of past years, we think that this per-centage may fairly be taken at 18 per cent."

5. The necessity for maintaining an adequate proportion of Europeans in the service is so generally admitted that it is unnecessary for me to dwell on the arguments on which that policy is founded. I will only refer to the fact that, as is pointed out by the Lieutenant-Governor of the Punjab, a European officer stands clear of all the sects and disputes, whether religious or not, which form a prominent feature in Indian life, and thus holds a position of complete and acknowledged impartiality as between different classes of natives, to which few, if any, natives of India can attain. Your Government and almost all the local governments are decidedly of opinion that the limit of one-sixth must be maintained for many years to come; the only exception is the Madras Government, who have expressed the view that that Presidency could be efficiently administered if two-thirds of the civil servants attached to it were Europeans. You are also of opinion that "the proportion of natives of India who succeed in entering the service by competition at the London examination requires to be closely watched; and that it may become necessary hereafter to restrict the total proportion of Indians in the service, as Lord Ripon's Government proposed, to 18 per cent. or some similar figure." It is not, however, necessary at present to discuss this question. I entirely agree with your Government in regarding the maintenance of the Indian Civil Service in the highest efficiency attainable as a matter of supreme importance. This has been well shown in the following passage, with which the introductory portion of the letter under reply concludes:—

"Deducting the 93 posts assigned to the Provincial Service, the cadre of posts at present reserved for covenanted and military officers is 731. These are the officers on whose administrative capacity and fitness for rule depends the quiet and orderly government of 217½ millions of people, inhabiting 943,000 square miles of territory. This bare statement of figures should, we think, be sufficient to convince any impartial mind of the supreme importance of obtaining the best material, in the best way, for the arduous duties which these officers have to perform. They represent the British Government in India; in the eyes of the people they are the British Government; it is to their personal influence their impartiality, justice, and efficiency, their physical and moral fitness that the due administration of the empire is entrusted; upon them, and not immediately upon military force, our strength rests; any weakening of their influence or deterioration in their efficiency would imply a relaxation of the restraints of government, and a reversion *pro tanto* to the conditions from which the country emerged only when it came into British possession."

6. Another of the recommendations unanimously accepted by the Public Service Commission was that the limits of age prescribed for candidates at the London competition should be raised from 17 as a minimum to 19, and from 21 as a maximum to 23. This proposal was made in the interests of native candidates, and in consideration of the evidence adduced that natives of India were placed at a disadvantage, in competing with Europeans, by the lower limits. Full effect has been given to this recommendation.

7. On the whole I am convinced that the new rules framed under the Statute of 1870 retain all the important features of the scheme which, after full investigation, was accepted by the Public Service Commission as satisfying all the legitimate aspirations of the natives of India. I have already intimated the opinion of Her Majesty's Government that an adequate proportion of the members of the Indian Civil Service must always be Europeans; and I agree in your Government's conclusion that any system of simultaneous examinations, identical in their nature, at which all who compete would be entitled to be classified in one list according to merit, would be incompatible with this condition which you, in common with Her Majesty's Government, regard as indispensable.

8. But it is not the European element alone which requires to be maintained. It is also indispensable, if the people are to be kept contented, and if large and important classes are not to be alienated from our rule, that a reasonable proportion of the higher offices should be filled by Muhammadans, Sikhs, and others, who have evinced a large capacity for the practical work of administration, but little or no aptitude for passing examinations with success. Sir D. Fitzpatrick remarks that "if absolutely open competition would result," as he evidently thinks it must, "in setting one of two great hostile parties above the other, we must either have some sort of limited competition, or give up competition altogether." And his apprehensions are fully borne out by experience in Bengal, where, as shown in the letter under reply, it was found that the system of recruiting for the Subordinate Executive Service by competition had absolutely excluded Muhammadans and natives of Behar and of Orissa, and would speedily, if persisted in, have resulted in the entire service being given over to Bengali Hindus. From the enclosures contained in your letter under reply and from your letter of the 24th January 1894, it appears that the class of natives of India who usually enter the Civil Service by competition are not considered suitable for service in Burma, the Punjab, the North-west Provinces, Oudh, or Sindh, and that the number of such natives allotted to the Province of Bengal has already approached a point beyond which it is thought unwise to allow it to go. So long as these conditions remain, it must be apparent that serious difficulties might be caused by the influx into the service of a large number of natives recruited by competitive examination whether in England or India.

9. One of the most valuable features of the existing system is that a superior Provincial Service has been constituted for each Province, comprising both the appointments newly "listed" (or which may hereafter be listed) as open to others than Indian civilians, and the higher posts in the Judicial and Executive Departments of the old Uncovenanted Service. The object of this measure was to raise the status and tone of the old Uncovenanted Service by forming a superior service of considerable dignity, and by holding out to all members of that service who distinguish themselves by their ability and trustworthiness the prospect of promotion to posts ordinarily held by members of the Imperial Service. I attach very great importance to this consideration, and, even if these meritorious officers could equitably be deprived of the new prospects which have been unfolded before them, I should be most reluctant to sanction any step which would relegate them to their former position. The Provincial Service, as now constituted, includes, besides a large number of lucrative and responsible appointments of a miscellaneous character, 1,827 posts, which involve the exercise of high judicial, magisterial, or executive functions, and carry salaries ranging from 200 to 1,000 rupees per mensem. To these the 93 posts already "listed," rising in pay to 2,000 rupees a month, will be added at the earliest moment compatible with due regard to the vested interests or reasonable expectations of others. Moreover, the dignity of the new Provincial Services has been distinctly enhanced by their separation from the Subordinate Services, which include, over and above the entire ministerial staff of the different Government offices and a large variety of miscellaneous posts, upwards of 1,900 appointments, also involving judicial or executive powers, and carrying salaries of from 100 to 250 rupees per mensem. Both these divisions of the old Uncovenanted Service are manned almost entirely by natives of India, and upon them devolves the bulk of the judicial and executive business of the country, the Imperial Service being restricted to the smallest number possible, and reserved for the superintendence of the administration, for the supervision of districts, and for such other work as must, as a rule, be discharged by European officers. It is evident that the prospect of rising by merit from the subordinate to the provincial division of the old Uncovenanted Service, and in the latter to the "listed" posts, must have the best effect on the tone of the entire staff, as well as on the quality of the recruits who join either of the two divisions. Sir Antony

MacDonnell considers that this hope "has raised new aspirations and inspired new energy into the great body of Indian native officials." "There has now," he says, "been infused throughout the Provincial Service, from the lowest grade to the highest, an improved tone and a higher sense of dignity and responsibility, which will continue to increase as the number of listed posts increases;" and in his opinion "it would be a public calamity if this improved tone in the administration were to be destroyed." Other local governments bear testimony to the same effect, and their reports leave no room for doubt that the Provincial Services, as now improved, hold out advantages sufficient to attract the best recruits that India can supply.

10. Your Government thus summarise the reasons which have induced them to dissent from the proposal to establish a simultaneous examination in India :—

- "(1.) No such concession is necessary for the fulfilment of the so-called pledges upon which the claim has been founded.
- "(2.) The practical difficulties of introducing a system of simultaneous examinations would be extremely serious.
- "(3.) It is conceded that, in order to ensure the efficient government of the country, a minimum of European officials is indispensable. Such a minimum could not be maintained in the event of simultaneous examination being resorted to in this country.
- "(4.) It would be entirely out of the question to reduce the existing minimum of Europeans at the present time.
- "(5.) Open competition is not the best way of selecting natives of the higher ranks of the service. It may be necessary in Europe in order to check nepotism, but in this case nepotism is impossible. Probation by actual employment forms a competitive examination of the best kind. Competitive examination in India would certainly have the effect of admitting a large number of competitors deficient in the qualifications necessary for the higher ranks of the service, and whose antecedents and origin would not be such as to command the confidence or the goodwill of the classes for whose welfare they would be responsible; on the other hand, it would exclude the most valuable and capable assistance which the British Government could obtain from natives of India, in the Sikhs, Muhammadans, and other races accustomed to rule and possessing exceptional strength of character, but deficient in literary education.
- "(6.) The proposed change would, unless the irreducible minimum of Europeans is to be diminished, involve the withdrawal of the appointments recently given, after the fullest consideration, to the Provincial Service, and would thus deprive that service of the prizes promised to it, disappointing its hopes and lowering its efficiency by a sense of injustice."

11. Her Majesty's Government are most anxious that the natives of the country should enjoy every facility, compatible with the maintenance of the efficiency of the administration and the safety of British rule, to enter the public service of India, and they have reconsidered the whole subject with a sincere desire to give full weight to the arguments in favour of a system of simultaneous examinations; but they have arrived at the conclusion that there are insuperable objections to the establishment of that system, and that by far the best method of meeting the legitimate claims and aspirations of the natives of the country is to bestow such of the higher posts as can be made available for them on those who distinguish themselves by their capacity and trustworthiness in the performance of subordinate duties.

12. Upon a careful review of the whole question, Her Majesty's Government agree with your Government that the system lately established is based on just and wise principles, and they are of opinion that, subject to such alterations in detail as experience may prove to be necessary, it should be maintained.

I have, &c.
(Signed) HENRY H. FOWLER.

STANDARD GAUGE.
State lines worked by Companies.
I.—EAST INDIAN.

	Miles.	Miles.
Hughly via chond line to Delhi (Main line).	114	
Bhadreswar to the bank of the Ganges (Bhadreswar branch).	4	
Hughly to Nalhati (Hughly bridge branch).	11	
Onid to Toposi (Singhara branch).	11	
Toposi to Khorabad.	11	
Nandi to Panora.	11	
Salunpur to Mohanpur.	11	
Sitaranpur to Barakar (Barakar branch).	11	
Barakar to Katras.	11	
Mile 1 from Barakar to Chanch.	11	
Damodar branch.	11	
Madhapur to Kharbharree collieries (Kharbharree branch).	11	
Mokameh to Ganges river (Mokameh branch).	11	
Bankipore to Gya (Patna-Gya branch).	11	
Bankipore to Digha ghāt (Digha ghāt branch).	11	
Dildarnagar to Farighat (Dildarnagar-Dhazipur branch).	11	
Naini to Jubbulpore (Jubbulpore branch).	11	
Allahabad fort branch.	11	
Cawnpore city branch.	11	
Tundla to Agra (Agra branch).	11	
Khana to Lucknesserai (Loop line).	11	
Nalhati to Azimganj (Azimganj branch).	11	
Timpahar to Rajmahal (Rajmahal branch).	11	
Jamalpur to Monghyr (Monghyr branch).	11	
Sultangunge to Sultangunge Ghāt (Sultangunge branch).	11	

II.—BENGAL-NAGPUR.

Asansol via Bilaspur to Nagpur (Main line).	627	
Damodar to Sanctoria coal mine (Sanctoria coal branch).	7	
Jharguda to Samalpur (Samalpur branch).	30	
Bilaspur to Katni (Katni branch).	190	

III.—INDIAN MIDLAND.

Rhorel via Jhansi and Gwalior to Agra cantonment (Main line).	315	
Jhansi to Manikpur (Manikpur branch).	180	
Jhansi to Cawnpore (Cawnpore branch).	185	
Pina to Saugor (Saugor branch).	46	
Line to form junction with the Bina-Guna railway at Bina.	1	

IV.—BHOPAL-ITARSI (British section).

Itarsi to the frontier of the Bhopal state.	13	
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V.—GODHRA-RUTLAM.

Godhra to Dehad.	45	
Dehad to Rutlam.	79	

VI.—WARDHA COAL.

Wardha to Warora.	45	
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VII.—DHOND-MANMAD.

Dhond to Manmad.	145	
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VIII.—BEZWADA EXTENSION.

Hyderabad frontier to Bezwada.	21	
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State lines worked by the State.

IX.—NORTH WESTERN (STATE).

Main line and branches (Commercial).

Ghaziabad to Peshawar (Main line).	614	
Amritsar to Pathankot (Pathankot branch).	66	
Wazirabad to Sialkot (Sialkot branch).	26	
Sialkot to the frontier of the Kashmir state (Kashmir branch).	84	
Meean Meer east to Meean Meer west (Meean Meer chond line).	82	
Lahore to Kianari (Main line).	82	
Raewind to Ferozepore cantonment (Ferozepore branch).	32	
Ferozepore cantonment to Hussainiwala.	64	
Sukkur to Sukkur bandar.	11	
Kotri to Kotri bandar.	11	

Frontier section (Military).

Sind-Sagar railway and Khushalgarh branch.		
Lala Musa to Sher Shah (Main line).	345	
Malakwal to Bhera (Bhera branch).	17	
Haripur to Kalayani (Kheera branch).	11	
Kundian to Mairi (Mairi branch).	11	
Mahmud Kot to Ghazi ghāt (Dera Ghazi Khan branch).	36	
Golra to Khushalgarh (Khushalgarh branch).	101	

Sind-Pishin railway.

Ruk via Sibi, Harnai and Bostan to Chaman (Main line).	335	
Quetta to Bostan (Quetta loop line).	20	

X.—HYDERABAD-UMARKOT.

Gidu bandar on the Indus river near Hyderabad to Shadipalli.	59	
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XI.—ODDH AND ROHILKHAND (STATE).

Moghal Sarai to Saharanpur (Main line).	544	
Rampur junction to Ajodhya ghāt (Ajodhya ghāt branch).	33	
Bera Banki to Bahraighat (Bahraighat branch).	21	
Lucknow to Rae Bareilly (Lucknow-Rae Bareilly branch).	45	
Lucknow to Cawnpore (Cawnpore branch).	45	
Chandausi to Aligarh (Aligarh branch).	69	
Lucknow to Hardwar (Hardwar branch).	17	
Bareilly via Rampur to Moradabad (Bareilly-Rampur-Moradabad chond).	56	

XII.—EASTERN BENGAL (STATE).

Eastern section (Eastern Bengal state railway).

Calcutta (Sealdah) to 145th mile (Main line).	145	
145th mile to Panchooria (Branch).	4	
Rajshahi to Goalundo (Branch).	4	
Jagati to river Ganges (Koushtea branch).	3	
Koushtea loop line.	3	
Poradaha to Damukdia ghāt (Poradaha branch).	11	
Canal junction to Chitpore (Chitpore branch).	2	

Southern section (Calcutta and South-eastern state railway).	174	
Calcutta to Port Canning (Original line).	25	
Sonarpur to Diamond Harbour (Diamond Harbour line).	28	
Ballygunge to Budge-Budge (Budge-Budge extension).	13	

XIII.—BENGAL CENTRAL.

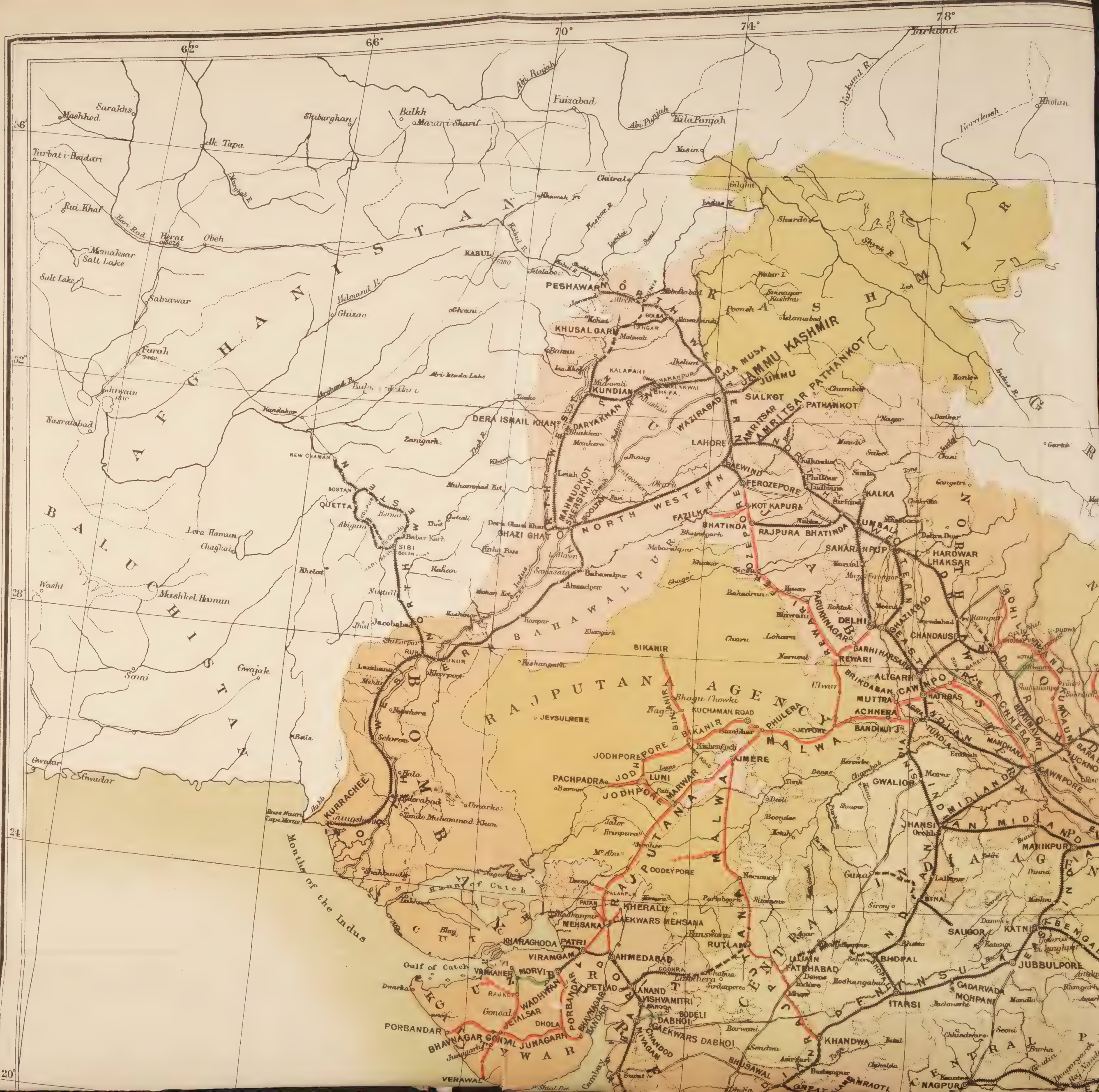
Dum-Dum to Khowla (Dum-Dum section).	104	
Ranaghat to Bangong (Ranaghat section).	20	

XIV.—CALCUTTA PORT COMMISSIONERS.

Cossipore to Kidderpore docks.	61	
--------------------------------	----	--

XV.—EAST COAST (STATE).

Kistna canal terminus to Bezwada.	4	
Bezwada to the right bank of the Godavari river opposite Rajahmundry.	91	
Left bank of the Godavari river near Rajahmundry to Vizianagaram.	163	
Vizianagaram to Naraj near Cuttack.	232	
Samalkot to Cocanada.	232	





METRE GAUGE—concluded.		
State lines worked by Companies—concluded.		
XXXIV.—ROHILKUND AND KUMAON (Lucknow-Bareilly section).	Miles.	Miles.
Lucknow via Mailani to Bareilly (Main line)	198½	
Mailani to Sohela (Dua branch)	23½	
Sohela to Sonaripur (Dua branch)	6½	
Bareilly grain siding	13	220
XXXV.—RAJPUTANA MALWA.		
Jumna east bank (Junction with East Indian railway) to Agra cantonment	(a) 3	
(Rajputana section.)		
Delhi via Bāndikui and Agra to Ahmedabad (Main line)	579½	
Garhi Harsaru to Farukh Nagar (Farukh Nagar salt branch)	71	
Bāndikui to Jumna east bank (Agra branch)	95	
Sāmbhar lake salt branch and sidings	324	
	715	
(Malwa section.)		
Ajmere to Khandwa (Main line)	393	
Pāichabad to Ujjain city (Ujjain branch)	144	
	407½	
(Cawnpore-Achnera section.)		
Cawnpore to Achnera (Main line)	239½	
Mandhana to Brahmaneri (Brahmaneri branch)	5	
Kāsganj to Sonon (Sonon branch)	9	
Muttra to Prindaban (Prindaban branch)	7½	
	261	
(Rewāri-Ferozepore railway.)		
Rewāri to Ferozepore (Main line)	240½	
Kot Kapūr to Fazilka (Fazilka branch)	50	
	290½	1,674
XXXVI.—PĀLANPUR DEESA.		
Pālanpur to the cantonment of Deesa	171	
XXXVII.—SOUTHERN MAHRATTA.		
Portuguese frontier via Guntakal and Nandyal to Kistna Canal terminus near Bezvada (Main line)	511½	
Gadag to Holgi (Bijapur branch)	172½	
Londa to Poona (Poona branch)	278	
Hubli to Harihar (Harihar branch)	83½	1,043½
XXXVIII.—GUNTAKAL-MYSORE FRONTIER.		
Guntakal to the Mysore frontier	119½	
XXXIX.—SOUTHERN MAHRATTA (MYSORE SECTION).		
Harihar via Bangalore to Mysore	296	
XL.—SOUTH INDIAN.		
(Madras-Tuticorin section.)		
Madras to Tuticorin	444	
Madras to Beach (Branch)	17	
Chingleput to Arkonam (Arkonam branch)	39	
Villupuram to the left bank of the Gingee river to connect with the Pondicherry railway (Pondicherry branch)	164	
Tanjore to Negapatam (Negapatam branch)	48½	
Trichinopoly to Erode (Erode branch)	87½	
Maniyāchi to Tinnevely (Tinnevely branch)	18	
	654½	
(Villupuram-Dharmavaram section.)		
Villupuram to Dharmavaram (Main line)	270½	
Pakala to Nellore (Nellore branch)	107½	
	387	1,041½
XLI.—ASSAM-BENGAL.		
Chittagong to Makum (Main line)	578½	
Laksm to Chandpur (Chandpur branch)	314	
Bādlarpur to Silchar (Silchar branch)	17	
Lumding to Gauhati (Gauhati branch)	113	740½
XLII.—MĀYAVARAM-MUTUPET.		
Māyavaram to Mutupet	54	
State lines worked by the State.		
XLIII.—EASTERN BENGA (STATE).		
Northern section (Northern Bengal state railway).		
Sara ghāt to Siliguri (Main line)	196	
Pāratipur to Kaunia on the right bank of the Teesta (Rungpore branch)	34	
Pāratipur to Dinagepore (Dinagepore branch)	191	
	249½	
Behar section (Assam-Bihar state railway).		
Manihāri via Katihār to Dinagepore (Main line)	84	
Katihār via Kasba to Ancharghāt (Kosi branch)	72½	
Bārsot to Kissingunge (Kissingunge branch)	35½	
	192	
Kauria-Dharila (2' 6" gauge) branch.		
Teesta to Mogalhāt, on the Dharila river	137	
Teesta via Kurigram, on the Dharila river, to Jātrapur, on the Brahmaputra river	23½	
	47	
Dacca section (Dacca state railway).		
Nāriyanganj ghāt to Mymensingh	86	504½
XLIV.—BURMA (STATE).		
Rangoon to Prome	161	
Rangoon to Toungoo	166	
Toungoo to Mandalay	220	
Suburban lines	9	
Meiktila road	13	
Mandalay to	14	
Sagaing (on line)	6	
Wundwin to Moga	144	315
Myothazan (on bank of the Irr.)		
Nahakaung to Katha		
Assisted Companies.		
XLV.—DEOGHUR.		
Baidyanāth to Deoghur		
XLVI.—ROHILKUND AND KUMAON (Company's section).		
Rhojepura to Kāthgodām (foot of Naini Tal hills)		
XLVII.—BENGAL DOGARS.		

Waltair to Coimbatore (Branches)	12	521
XVI.—MUSHKAF-BOLAN.		
Bolan Junction to Nari bank	74	
Nari bank to Kolpur	56	
Kolpur to Quetta	53	
XVII.—MARI-ATTOCK.		
Romia to Basal (New Pind Sultan)	(c) 35	
Langar to mile 74	(c) 33	
Mile 74 to Mari	(d) 22	
Lines worked by guaranteed Companies.		
XVIII.—GREAT INDIAN PENINSULA.		
Bombay to Jubbulpore (North-east line)	615	
Bhusawal to Nagpur (Nagpur branch)	24	
Gidharvada to Mohpani coal-fields (Mohpani branch)	19	
Kalyan to Raichur (South-east line)	408	
Palasdhari to Khopoli (Khopoli branch)	74	
	1,280	
XIX.—BOMBAY, BARODA AND CENTRAL INDIA.		
Bombay to Wadhwan (Main line)	389	
Anand to Godhra (Godhra branch)	49	
Virangam to Kharaghoda (Patri branch)	22	
	460	
XX.—MADRAS.		
Madras to Calicut (South-west line)	414	
Veyasarpandy to Rayapuram (Rayapuram branch)	21	
Jalarpet to Bangalore city (Bangalore branch)	87	
Podanur to Mettupalayam (Vayur branch)	25	
Olavakotu to Palghat (Palghat branch)	22	
Arkonam to Raichur (North-west line)	307	
	830	
Assisted Companies.		
XXI.—DELHI-UMBALLA-KALKA.		
Delhi via Umballa to Kalka	161	
XXII.—TARKESSUR.		
Seoraphuli to Tarkessur	22	
Lines owned by native states and worked by Companies.		
XXIII.—KHAMGAON.		
Jalamb to Khimgaon	7	
XXIV.—AMRAOTI.		
Badnera to Amritoli	5	
XXV.—BHOPAL-ITARSI (Native state section).		
Frontier of the Bhopal state to Bhopal	44	
XXVI.—THE NIZAM'S GUARANTEED STATE.		
Wadi via Secunderabad to Hyderabad frontier (Main line)	310	
Junction of new line, 115 miles from Wadi, to Trimalgherry (Trop siding)	(c) 21	
Bhusan Nagar to Hyderabad (Hyderabad branch)	3	
Dornakal to Singareni coal-fields (Mineral branch)	16	
	332	
XXVII.—THE GAEKWAR'S PETLAD.		
Anand to Petlad	131	
XXVIII.—KOLAR GOLD FIELDS.		
Bowringpet to Mysore mines station	10	
Lines owned by native states and worked by state railway agency.		
XXIX.—RAJPUTANA-BHATINDA.		
Rajpura via Patiala to Bhatinda	108	
XXX.—JAMMU AND KASHMIR (Native state section).		
Frontier of the Kashmir state to the left bank of the Tawi river near Jammu	16	
Lines owned and worked by native state.		
XXXI.—BINA-GUNA.		
Bina to Guna	73	
XXXII.—BHOPAL-UJJAIN.		
Bhopal to Ujjain	114	
METRE GAUGE.		
State lines worked by Companies.		
XXXIII.—BENGAL AND NORTH-WESTERN.		
TIRHUT SECTION.		
Semaria ghât to Bettiah (Main line)	145	
Samastipur to Khanwa ghât on the Kosi river (Kosi extension)	88	
Durbhunga to Bairaighia (Bairaighia branch)	69	
Mozufferpore to Sonapore (Sonapore branch)	84	
Hajepore to Hajepore ghât (Hajepore branch)	2	
	341	
COMPANY'S SECTION.		
Sonapore (opposite Patna) to Ajodhya (Main line)	238	
Sonapore to Bunwarchak (Loop line)	9	
Chupra to Revelganj (Revelganj branch)	7	
Gorakhpur to Usha bazar (Usha bazar branch)	39	
Mankapur to Nainital road (Nainital road branch)	88	
Gonda to Gograhat	31	
Gograhat to Bahramghât (Bahramghât branch)	(f) 6	
	420	762

* Under construction or sanctioned for commencement.

† Although for convenience classed amongst state railways, this line is the property of the Bengal Central and North Western Railway Company.

(a) Open for coal traffic only.
 (b) This is a military line and is not used for ordinary public traffic.
 (c) The length between Basal (New Pind Sultan) and Langar, 16 miles, is a part of the open mileage of the Khushalwar branch of the North Western (state) railway.
 (f) Commencement of work not yet sanctioned.
 (e) Not used for ordinary public traffic.
 (f) Available for use during the dry season only.

REFERENCES.

Standard Gauge open	Double line	=====
	Single	=====
"	sanctioned or under construction	=====
Metre Gauge open		=====
"	sanctioned or under construction	=====
Other Gauges open		=====
"	sanctioned or under construction	=====
Steam Tramways, open		=====
"	sanctioned or under construction	=====
Cooch Behar	Ft. 2	Ins. 6
Gaekwar's Dabhoi	2	6
Kannia Dharlla	2	6
Morvi	2	6
Darjeeling-Himalayan	2	0
Jorhat	2	0

Junctions between two or more foreign lines	⊙
" on home lines	○





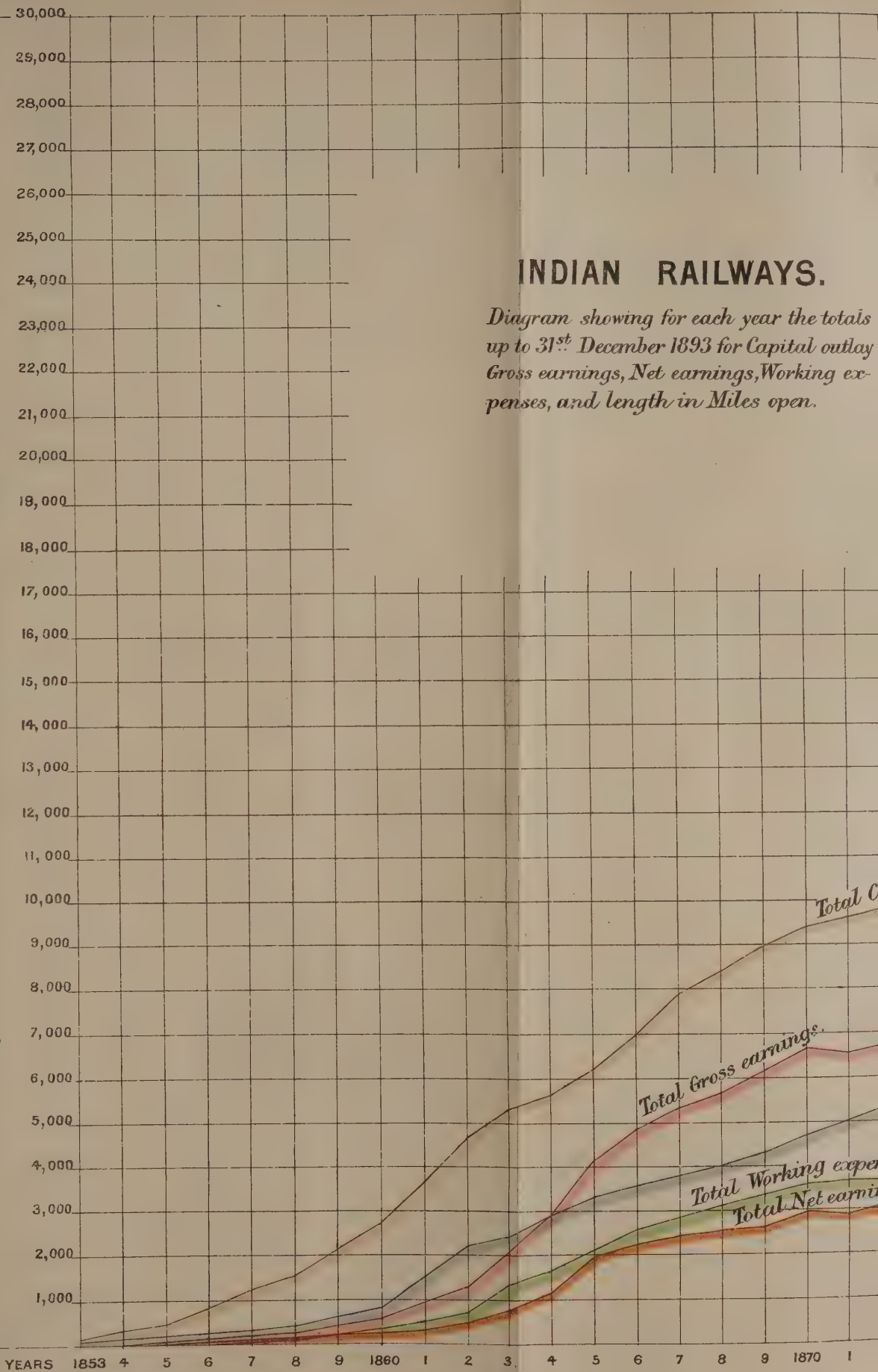
East bank of the Teesta opposite Jalpaiguri to Mal bazar (Main line)		263
Mal bazar to Dam Dim		44
Lataguri to Ranshai (Branch)		52
XII. — DIBRU-SADIYA.		
Dibrugarh on the left bank of the Brahmaputra river via Makum		614
junction to Diling bridge (Main line)		16
Makum to Talap (Talap branch)		774
L. — NIMHRI.		
Mettupkhalayan to Coonor		16
Lines owned by native states and worked by Companies.		
LL. — THE GAEKWAR'S MEHSANA.		
Virangam via Mehsana to Kheralu		68
Mehsana to Patan		244
LIL. — KOLHAPUR.		
Kolhapur to Miraj		23
LIII. — YESVANTPUR-MYSORE FRONTIER.		
Yesvantpur to Mysore frontier		51
LIV. — MYSORE NANJANGUD.		
Mysore to Nanjangud		15
Lines owned and worked by native states.		
LV. — JODHPUR-BICKANEER.		
Jodhpur section.		
Marwar railway junction via Luni to Bickaneer frontier (Main line)		1874
Luni to Pachpadra (Pachpadra extension)		60
Merta road to Kuchaman road (Makrana branch)		73
		3201
Bickaneer section.		
Bickaneer frontier to Bickaneer town		431
		304
LVI. — BHAVNAGAR-GONDAL-JUNAGAR-PORBANDAR.		
Bhavnagar to Wadhwan		1044
Dholi to Porbandar bandar		159
Jatalsar to Veraval bandar		70
		(b) 3334
LVII. — JETALSAR-RAJKOT.		
Jetalsar to Rajkot (Main line)		461
Rajkot to the point of junction with Morvi railway		401
LVIII. — OODEYPUR-CHITOR.		
Chitorgarh to Debari near Oodeypore		601
LIX. — RAJKOT-JAMNAGAR.		
Rajkot to Jamnagar with branch to Port Jodiya		170
Foreign lines.		
LX. — WEST OF INDIA PORTUGUESE.		
Mormugao to the Portuguese frontier (Portuguese Government guarantee)		51
LXI. — PONDICHERY.		
Left bank of the Gingee river to Pondicherry (French Government guarantee)		71
SPECIAL GAUGES.		
State line worked by the State.		
LXII. — JORHAT (2' 0").		
Gosaidgan to Titabar		181
Alternative cold weather section to Steamer ghât (Main line)		21
Chenimara to Mariani (Mariani branch)		7
Assisted Company.		
LXIII. — DARJEELING-HIMALAYAN (2' 0").		
Siliguri to Darjeeling		51
Line owned by native state and worked by Company.		
LXIV. — THE GAEKWAR'S DABHOI (2' 6").		
Miyagam via Dabhoi to Bodeli (Main line)		421
Dabhoi to Chandod (Branch)		101
Dabhoi to Vishvamitri (Branch)		181
Line owned by native state and worked by state railway agency.		
LXV. — COOCH BEHAR (2' 6").		
Gitaldaha (on the left bank of the Dharla river opposite Mogalhât) to the right bank of the Torsa river		221
Line owned and worked by native state.		
LXVI. — MORVI (2' 6").		
Wadhwan via Vankner to Morvi (Main line)		681
Vankner to Rajkot (Rajkot branch)		271
Steam tramways outside municipal limits.		
CHERRA-COMPANYGANJ (2' 6").		
Companyganj via Thariaghât to Komora line stone quarry		1
DANDOT COLLIERY (2' 0").		
Kalapani to the north of the main mine		2
Head of middle incline to shaft No. 10 of outcrop mine		11
No. 10 south outcrop mine to Ratta Katha		1
POWAYAN (2' 6").		
Shahjahanpur via Powayan to Khotar.		31
Khotar to Mailani		81
THATON-DUYINZAIK (2' 6").		
Thaton to Duyinzai, on the Donedanie river		81
TARAKESHWAR-MUGRA (2' 6").		
Tarakeshwar to Mugra		31
BARSII (2' 6").		
Barsi road on the Great Indian Peninsular Railway to Barsi town.		211

* Under construction or sanctioned for commencement.
(a) Standard gauge. Not included in the total.
(b) Includes 4 1/2 miles of dock estates and quarry lines.

The figures on this scale represent lakhs for the Capital outlay; tens of thousands for Gross earnings, Working expenses and Net earnings, and Miles for length open.

INDIAN RAILWAYS.

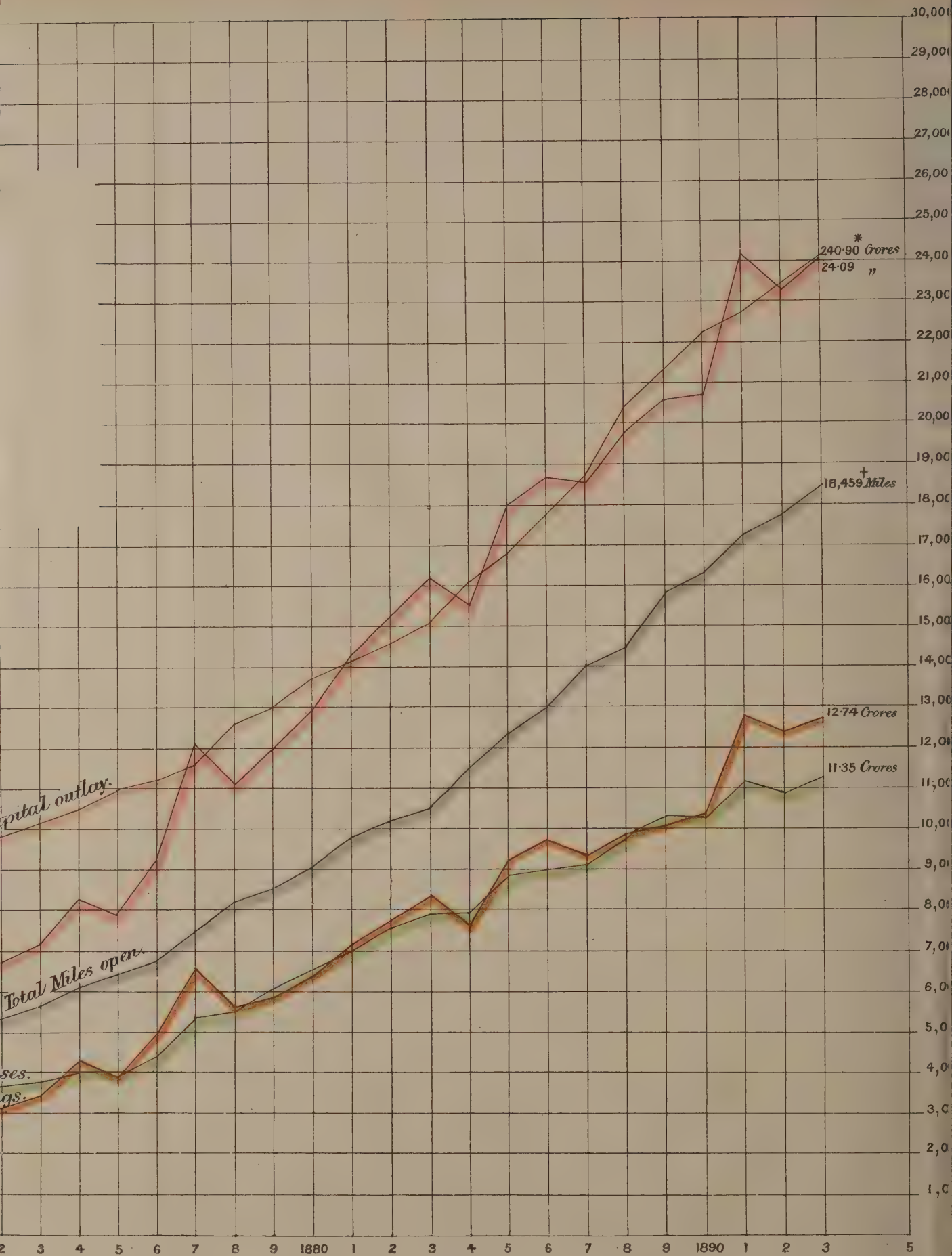
Diagram showing for each year the totals up to 31st December 1893 for Capital outlay, Gross earnings, Net earnings, Working expenses, and length in Miles open.



* As per details in Chapter VI, paragraph 1.
Add—Calcutta Port Commissioners' railway.

Deduct—Cherra-Companyganj railway, tre.
Total difference as per foot-note.

† Excludes the old Quetta loop, which is



of the Administration report	248.49
excluded from statement N° 10 in Chapter VI.	0.59
	249.08
ted as a steam tramway for statistical purposes	0.08
in statement N° 10, page 71 of the report	8.10
	8.18
eing reconstructed on a new alignment.	240.90

ADMINISTRATION REPORT

ON THE

RAILWAYS IN INDIA

FOR

1893-94.

BY

LIEUTENANT-COLONEL W. S. S. BISSET, C.I.E., R.E.,
OFFICIATING DIRECTOR-GENERAL OF RAILWAYS.

Presented to both Houses of Parliament by Command of Her Majesty.



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1894.

CONTENTS.

	Page.	Paragraph.
CHAPTER I.		
GENERAL.		
Classification	13	1
Open mileage	13 & 14	2 & 3
Extensions of line sanctioned	14	4
Total sanctioned mileage	14	5
Important works completed and in progress	14	6
Principal events	15	7
Cost	16	8
Graphic diagram of mileage, &c.	17	9
Gross earnings	17	10
Passenger traffic	17	11
Goods traffic	18	12
Approximate earnings during the first quarter of 1894	18	13
Working expenses	19	14
Net earnings	19	15
Return on capital	19	16
Financial results	19	17
<i>Statements.</i>		
Financial results to the State of working the Guaranteed Railways	21	17
Financial results to the State of working Imperial lines constructed with capital raised by, or supplied to, Companies under contract with the Secretary of State	21	17
Financial results to the State of working the State Railways, Commercial and Military	22 & 23	17
Financial results to the State of working lines constructed or purchased by Government and worked by Companies	23	17
Direct annual gain or loss to the State from railway outlay	24 & 25	17
CHAPTER II.		
WORKS COMPLETED AND IN PROGRESS.		
East Indian Railway	26	1
Eastern Bengal (State) Railway	26	2
Bengal Central Railway	27	3
Bengal Port Commissioners' Railway	27	4
Oudh and Rohilkhand (State) Railway	27	5
North-Western (State) Railway, gradient improvement works	27	6
North-Western (State) Railway system	28	7
Mushkaf-Bolán (State) Railway	29	8
Mári-Attock Railway	30	9
Indian Midland Railway	31	10
Bhopal-Itársi Railway	31	11
Bhopal-Ujjain Railway	31	12
Bina-Guna Railway	32	13
Bengal-Nágpur Railway	32	14
Great Indian Peninsula Railway system	32	15
Bombay, Baroda, and Central India Railway	32	16
Godhra-Rutlam Railway	33	17
The Gaekwar's Petlad Railway	33	18
Madras Railway	33	19
Kolar Gold Fields Railway	33	20
The Nizam's Guaranteed State Railway	34	21
East Coast (State) Railway	34	22
Assam-Bengal Railway	34	23
Dibru-Sadiya Railway	35	24
Bengal and North-Western Railway, Tirhoot Section	35	25
Cooch Behar Railway	35	26
Bengal-Dooars Railway	35	27
Rohilkund and Kumaon Railway, Lucknow-Bareilly section	35	28
Rajputana-Malwa Railway	35	29
Palampur-Deesa Railway	36	30
The Gaekwar's Mehsána Railway	36	31
Oodeypore-Chitor Railway	36	32

	Page.	Paragraph.
Jodhpore-Bickaneer Railway	36	33
Bhāvnagar-Gondal-Junāgarh-Porbandar Railway	36	34
Jetalsar-Rājkot Railway	36	35
Southern Mahratta Railway system	36	36
South Indian Railway	37	37
Máyavaram-Mutupet Railway	38	38
Nílgeri Railway	38	39
Burma (State) Railway system	38	40
Mu Valley (State) Railway	38	41

CHAPTER III.

LINES UNDER SURVEY OR PROJECTED.

Cuttack-Midnapur-Calcutta Railway Survey	40	1
Singia-Madareepore-Chandpur Railway Survey	40	2
Rae Bareilly-Benares Railway Survey	41	3
Ghaziabad-Moradabad-Chandauli Railway Survey	41	4
Delhi-Minchinabad Bhāwalpur Railway Survey	41	5
Wazirabad-Mooltan Railway Survey	42	6
Zhob Valley Railway, Dera Ismail Khan-Murtiza section	42	7
Kashmir Railway project	42	8
Mári-Attock Railway	42	9
North-Western (State) Railway	42	10
Kotri-Rohri Railway Survey	42	11
Saugor-Katni Railway Reconnaissance Survey	43	12
Rutlam-Ujjain Railway	43	13
Rutlam-Muttra Railway	43	14
Tápti Valley Railway	43	15
Raipur-Sonpur Railway Survey	43	16
Sambalpur-Khurda Railway Project	43	17
Raipur-Vizagapatam Railway Project	43	18
Sini-Midnapur Railway Survey	44	19
East Coast (State) Railway	44	20
Bezawada-Madras Railway Survey	44	21
Bengal and North-Western Railway (Company's section)	44	22
Bareilly-Soron Railway Survey	45	23
Umarkot-Pachpadra Railway Survey	45	24
Chittagong-Akyab-Minhla Railway Survey	45	25
Mandalay-Kunlon Railway Survey	46	26
East Indian Railway	46	27
Rámpur-Ramnagar Railway Survey	46	28
Aonla-Budáon Railway Survey	46	29
Ferozepore-Ludhiána Railway Survey	47	30
Umballa-Patíála Railway Survey	47	31
Connections with Bhagwangola	47	32
Jungsbahi-Tatta Railway Survey	47	33
Shoranur-Cochin and Calicut-Cannamora Railways	48	34
Shoranur-Trichur Railway Survey	48	35
Palghat-Kurrapadna Railway Survey	48	36
Sultanpur-Bogra and Hili-Bhowaniganj Railway Projects	48	37
Bengal and North-Western Railway (Tirhoot section)	48	38
Gonda Balrampur-Ootrawlia-Tulsipur Railway	48	39
Rohilkund and Kumaon Railway, Lucknow-Bareilly Section	48	40
Kichha-Kashipur Reconnaissance Survey	48	41
Kalka-Simla Railway Survey	48	42
Ahmedabad-Dholera Railway	49	43
Ahmedabad-Parantij Railway	49	44
Morvi Railway	49	45
Extensions of the Gaekwar's Railways	49	46
Rajpipla Railway	50	47
Rajkot-Jamnagar Railway	50	48
Kolhapur Railway	50	49
Kurnool road-Kurnool Railway Project	51	50
Nanjangud-Gundlapet Railway	51	51
West Coast Railways	51	52
Coonor-Ootacamund Railway Survey	51	53
Cuddalore-Pondicherry and Peralam-Karikál Railway Surveys	51	54
Connections with Ceylon	51	55
Bezváda-Masulipatam Railway	51	56
Burma (State) Railway, Meiktila-Myingyan Branch	51	57
Mogaung-Irrawaddy Railway Survey	52	58
Schedule of Railways recently surveyed or lately put forward for consideration	52	59

	Page.	Paragraph.
CHAPTER IV.		
COLLIERIES AND OIL WELLS.		
Kurhurbaree and Serampore Collieries	53	1
Eastern Bengal (State) Railway	53	2
Makum Colliery	54	3
Petroleum in Assam	54	4
Warora Colliery	54	5
Mohpani Colliery	55	6
Umaria Colliery	56	7
Coal-field at Telanpali, near the Eeb River	57	8
Singareni Colliery	57	9
Dandot Colliery	58	10
Bhaganwala Colliery	59	11
Khost Colliery	60	12
Sharigh Colliery	61	13
Quetta Coal-fields	61	14
Baluchistan petroleum operations	62	15
Total coal production	62	16
<i>Statement.</i>		
Quantity of coal produced in each province in India during the last 14 years	62	16
CHAPTER V.		
STORES AND ROLLING STOCK (CAPITAL).		
<i>Stores.</i>		
Expenditure in England	63	1
Expenditure in India	63	2
Cost of the Establishment at ports	63	3
Ships employed	63	4
Credits to Civil Department on account of one per cent. insurance	64	5
Value of imported stores held in reserve	64	6
Capital locked up in stores	64	7
<i>Rolling Stock.</i>		
Rolling stock adapted for military purposes	64	9
Brakes	66	10
Couplings	67	11
Retiring accommodation for females	68	12
Lighting of railway carriages with gas on Pintsch's system	68	13
Committee of Locomotive and Carriage Superintendents	68	14
Covered goods and open sided waggons of the military type	68	15
Cleaning of horse-boxes and cattle trucks	68	16
<i>Statements.</i>		
Number of carriages fitted with hooks or racks for soldiers' rifles	69	9
Number and value of locomotives and vehicles on the standard and metre gauge railways, and the rolling stock fitted with continuous and continuous-automatic brakes	70-73	8
Number of carriages fitted with retiring accommodation for females	74	12
Stores balances on the standard and metre gauge railways	75 & 76	7

	Page.	Paragraph.
CHAPTER VI.		
CAPITAL.		
Total capital expenditure on Indian railways, including lines under construction and survey, and collieries	77	1
<i>Statements.</i>		
Total capital raised by the Guaranteed Railway Companies	77	2
Total capital raised for State Lines leased to Companies	78	2
Debenture Loans	79	3
Expenditure on capital account in England and in India on State and Native State Railways	80-87	3
Capital authorised to be raised, the amount raised, and amount withdrawn by Guaranteed and Subsidised Railways and State lines leased to Companies	88	3
Amount received from and withdrawn by Guaranteed and Subsidised Railways and State lines leased to Companies	89	3
Withdrawals out of capital for expenditure by Guaranteed Railway Companies during each financial year from the commencement	90	3
Capital withdrawals by the Bengal Central, Southern Mahratta, Mysore, Bengal-Nágpur, Indian Midland, Lucknow-Bareilly, and Assam-Bengal Railways during each financial year from the commencement	91	3
Withdrawals out of capital for expenditure by the Rohilkund and Kumaon Railway Company during each financial year from the commencement	91	3
Capital outlay on open lines of railway and the average cost per mile	92 & 93	3
CHAPTER VII.		
MAIN RESULTS OF WORKING, AND REVENUE STATISTICS.		
Main results of working	94	1
Mean mileage worked, and capital outlay	94	2
Gross earnings	94	3
Coaching traffic	94	4
Goods traffic	94	5
Working expenses	94	6
Net earnings and return on capital	94	7
<i>Statements.</i>		
Results per train mile	95	8
Earnings per mile per week, and ratio of working expenses to gross earnings	96	9
Earnings per mile worked per week in five-yearly periods	97	10
Capital expenditure and general results of working of all railways	98	11
Net earnings and percentage on capital outlay	98	12
Results of working the Guaranteed Railways	98	13
General results of working the principal standard and metre gauge railways	99	14
Financial Results of State lines worked by State agency, excluding non-commercial sections	99	15
Capital outlay and revenue transactions for the commercial and military sections of the North-Western (State) Railway	100	16
Net earnings, and their percentage on capital expenditure on open line, including steamboat service but excluding suspense accounts, for the principal railways during the last five years	101	17
Main results of working on all railways	102 & 103	1
General results of working the principal standard and metre gauge railways	104-107	14
Total amount advanced on account of guaranteed interest to 31st December 1893, net revenue of guaranteed railways to 30th June 1893 appropriated towards its repayment and the balance	108	13
Amount of total surplus profits on Guaranteed Railways as calculated under the contracts for distribution between Government and railway companies	108	13
Capital expenditure, net revenue, guaranteed interest, interest in excess of revenue, and revenue in excess of interest, on the Guaranteed Railways	109	13
Result of working the Guaranteed Railways and lines leased to or purchased from Guaranteed Companies, and worked by those Companies	109 & 110	13

	Page.	Paragraph.
CHAPTER VIII.		
DETAILS OF REVENUE EARNINGS AND EXPENDITURE.		
Public traffic	111	1
Grain and seeds traffic	111	2
Wheat traffic	111	3
Principal features of working standard and metre gauge railways	112	4
East Indian Railway System	112	5
Bengal-Nágpur Railway	112	6
Indian Midland Railway system	113	7
Godhrá-Rutlam Railway	113	8
North-Western (State) Railway including the Jammu and Kashmir Railway, Native State section	114	9
Hyderabad-Umarkot Railway	115	10
Oudh and Rohilkhand (State) Railway	115	11
Eastern Bengal (State) Railway	115	12
Bengal Central Railway	116	13
Calcutta Port Commissioners' Railway	116	14
East Coast (State) Railway	117	15
Great Indian Peninsula Railway System	117	16
Bombay, Baroda, and Central India Railway	117	17
Madras Railway	118	18
The Nizam's Guaranteed (State) Railway System	118	19
The Gaekwar's Petlad Railway	118	20
Rájpura-Bhátinda Railway	119	21
Bengal and North-Western Railway System	119	22
Rajputana-Malwa Railway	119	23
Pálanpur-Deesa Railway	120	24
Southern Mahratta Railway System	120	25
South Indian, including the Pondicherry Railway	121	26
Burma State Railway System	121	27
Deoghur Railway	121	28
Rohilkund and Kumaon Railway System	122	29
Bengal-Dooars Railway	122	30
Dibru-Sadiya Railway	122	31
The Gaekwar's Mehsána Railway	123	32
Jodhpore-Bickaneer Railway	123	33
Bhávnaagar-Gondal-Junágarh-Porbandar Railway	123	34
Jetalsar-Rájkot Railway	124	35
West of India Portuguese Railway	124	36

Statements.

Summary of principal commodities carried on the standard and metre gauge railways	125	1
Mileage of railways open for traffic and mean mileage worked	126-128	4
Passenger traffic on the standard and metre gauge railways	130-135	4
Goods traffic on the standard and metre gauge railways	134-137	4
Unit mileages of passenger and goods traffic, standard and metre gauge railways	138-141	4
Gross earnings, working expenses, and net earnings and results per train-mile and per cent. of gross earnings ; also gross earnings per mean mile worked per week on the standard and metre gauge railways	142-145	4
Working expenses in detail on the standard and metre gauge railways	146-149	4

CHAPTER IX.

RATES AND FARES.

Revised rates for the carriage of coal and railway materials	150	1
Passenger fares and goods rates on standard and metre gauge railways	150	2
Alteration in rates and fares	150	3

Coaching Fares.

Bengal-Nágpur Railway	150	4
Indian Midland Railway System	150	5
Bombay, Baroda, and Central India Railway System	150	6
Oudh and Rohilkhand (State) Railway	151	7
East Coast (State) Railway	151	8
Bengal and North-Western Railway System	151	9

	Page.	Paragraph.
<i>Goods Rates.</i>		
East Indian Railway System	151	10
Bengal-Nágpur Railway	151	11
Indian Midland Railway System	152	12
North-Western (State) Railway System	152	13
Oudh and Rohilkhand (State) Railway	152	14
Eastern Bengal (State) Railway System	152	15
Calcutta Port Commissioners' Railway	152	16
East Coast (State) Railway	152	17
Great Indian Peninsula Railway System	152	18
Bombay, Baroda, and Central India Railway System	153	19
Southern Mahratta Railway System	153	20
Bengal and North-Western Railway System	153	21
South Indian Railway	153	22
Burma (State) Railway	153	23
Jodhpore-Bickaneer Railway	154	24
Bhávnagar-Gondal-Junágarh-Porbandar Railway	154	25
<i>Statement.</i>		
Passenger fares and goods rates on the standard and metre gauge railways	156-159	2

CHAPTER X.

FUEL CONSUMPTION.

Total consumption of fuel on the standard and metre gauge railways	160	1 & 2
Particulars regarding the description of fuel used on the principal railways and equivalents adopted for converting the several descriptions of fuel into term of Bengal (Kurhurbaree) coal	160	3
East Indian Railway System	160	4
Eastern Bengal (State) Railway System	160	5
Oudh and Rohilkhand (State) Railway	161	6
North-Western (State) Railway System	161	7
Indian Midland Railway	162	8
Bengal-Nágpur Railway	162	9
Great Indian Peninsula Railway System	163	10
Bombay, Baroda, and Central India Railway	164	11
Madras Railway	164	12
The Nizam's Guaranteed (State) Railway System	164	13
East Coast (State) Railway	164	14
Bengal and North-Western Railway System	165	15
Rajputana-Malwa Railway	165	16
Jodhpore-Bickaneer Railway	165	17
Bhávnagar-Gondal-Junágarh-Porbandar Railway	165	18
Southern Mahratta Railway System	165	19
South Indian Railway	166	20
Burma (State) Railway System	166	21

Statements.

Equivalent of one ton of Kurhurbaree coal in terms of other descriptions of fuel as used by some of the principal railways	168	3
Particulars of fuel consumption on the principal railways	169	3

CHAPTER XI.

PERSONS EMPLOYED.

Summary of the number of servants employed on the standard and metre gauge railways open for traffic	170	1
Percentage of Casualties amongst the European and East Indian employés on the standard and metre gauge railways open for traffic	170	2

	Page.	Paragraph.
<i>Statements.</i>		
Number of servants employed on the standard and metre gauge railways open for traffic	172 & 173	1
Number of casualties, by death, resignation, discharge, or dismissal amongst the European and East Indian employés on the standard and metre gauge railways open for traffic	174 & 175	—
Provident institutions	176	3
Railway Volunteer Corps	177 & 178	4
Strength and cost of police on the standard and metre gauge railways open for traffic	180 & 181	5

CHAPTER XII.

ROLLING STOCK (REVENUE).

Statements.

Average number of locomotives in use on the principal railways, and the work obtained from each	182	1
Number of engines and vehicles used in conveying traffic, and the number of miles travelled by trains, standard and metre gauge railways	184 & 187	2

CHAPTER XIII.

FLOOD DAMAGES, &c.

North-Western (State) Railway	188	2
Eastern Bengal (State) Railway	188	3
East Coast (State) Railway	189	4
Bombay, Baroda, and Central India Railway	189	5
Madras Railway	189	6
Bengal and North-Western Railway System	189	7
Rajputana-Malwa Railway	190	8
Southern Mahratta Railway System	190	9
South Indian Railway	190	10
Burma (State) Railway	191	11
Dibru-Sadiya Railway	191	12
The Gaekwar's Mehsana Railway	191	13
Bhavnagar-Gondal-Junagarh-Porbandar Railway	191	14
Jetalsar-Rajkot Railway	192	15

CHAPTER XIV.

ACCIDENTS.

Total number of persons killed and injured in connection with railway working	193	1
East Indian Railway	193	2
Bengal-Nagpur Railway	194	3
North-Western (State) Railway System	194	4
Oudh and Rohilkhand (State) Railway	194	5
Eastern Bengal (State) Railway System	194	6
Great Indian Peninsula Railway	195	7
Bombay, Baroda, and Central India Railway	195	8
Madras Railway	195	9
Rajputana-Malwa Railway	195	10
Southern Mahratta Railway System	196	11
South Indian Railway	196	12
Burma (State) Railway	196	13
Dibru-Sadiya Railway	196	14
Jodhpore-Bickaneer Railway	196	15
Morvi Railway	197	16

Statements.

Abstract of accidents to trains, rolling-stock, permanent-way, &c.	198	17
--	-----	----

	Page.
APPENDICES.	
A. Additions to open mileage from the 1st April 1893 to the 31st March 1894 - - -	200
B. Extensions of line sanctioned from the 1st April 1893 to the 31st March 1894 - - -	201
C. Gauge and classification of lines, and lengths of lines sanctioned and open for traffic on the 31st March 1894 - - -	202-206
D. Progress made in the opening of railways year by year from the commencement - - -	208-215
E. Length of railways open for traffic at the end of each year from the commencement - - -	216-223
F. Total approximate earnings from the 1st January to the 31st March 1894, as compared with the actuals of the corresponding periods of 1892 and 1893 - - -	224 & 225
G. Principal commodities carried, and the earnings therefrom, during the year 1893, as compared with the previous year - - -	226 & 239
H. Schedule of railways recently surveyed or lately put forward for consideration - - -	240
INDEX.	
Index of contents - - - - -	241-256

LIST of TABULAR STATEMENTS contained in the DIRECTOR GENERAL of RAILWAYS'
Report for 1893-94.

Page.	Statement Number.	Particulars.
CHAPTER I.		
21	1	Financial results to the State of railway working for the financial year 1892-93, Guaranteed railways.
21	2	Financial results to the State of railway working for the financial year 1892-93, Imperial lines constructed with capital raised by, or supplied to, companies under contract with the Secretary of State.
22	3	Financial results to the State of railway working for the financial year 1892-93, State railways, commercial.
23	3 A	Financial results to the State of railway working for the financial year 1892-93, State railways, military.
23	4	Financial results to the State of railway working for the financial year 1892-93, lines constructed or purchased by Government and worked by companies.
24 & 25	5	Annual gain or loss to Government from railway outlay from 1858-59 to 1871-72 and for each financial year from 1872-73 to 1893-94 (£) and (Rs.). Estimated outlay for 1893-94.
CHAPTER V.		
70-73	6	Number and value of locomotives and vehicles on the standard and metre gauge railways on the 31st of December 1892 and 1893, and the rolling stock fitted with continuous and continuous automatic brakes.
74	6 A	Number of carriages fitted with retiring accommodation for females at end of 1893, in accordance with section 64 of Act IX. of 1890.
75 & 76	6 B	Capital locked up in stores on the standard and metre gauge railways on the 31st December 1893 as compared with the previous year.
CHAPTER VI.		
77 & 78	7 & 8	Capital of Guaranteed railways and State lines leased to companies, in £ at the end of 1893.
79	9	Details of stock, debentures, &c., in £ at the end of 1893.
80-87	10	Expenditure on capital account on State and Native States railways, giving details of expenditure under different heads in Rs. to the end of 1893.
88	11	Guaranteed and subsidised lines. Amount of capital authorised, raised, and withdrawn to the end of 1893 in £ (calendar year).
89	12	Guaranteed and subsidised lines and State lines leased to companies. Amount received from and withdrawn, during 1893 (calendar year) (£).
90	13	Guaranteed railways only. Amount withdrawn, England and India, each year from 1849-50 to 1892-93 (financial) (£). Partly estimated for 1893-94.
91	14	State railways leased to companies. Amount (£) as above from 1881-82 to 1892-93. Estimated for 1893-94.
91	15	Rohilkund and Kumaon subsidised railway. Amount (£) as above from 1882-83 to the end of 1892-93.
92 & 93	16	Capital outlay on open lines of railway, and the average cost per mile at the end of 1893 (Rs.).
CHAPTER VII.		
101	17	Net earnings, and their percentage on the capital expenditure on open lines, including steamboat service, but excluding suspense accounts for the principal railways, during last five years (1889 to 1893) (calendar year) (Rs.).
102 & 103	18	Main results of working of all railways during the years ending 31st December 1892 and 31st December 1893.
104 & 107	19	General results of the working of the principal standard and metre gauge railways for 1893 (calendar year) (Rs.).
108	20	Total amount advanced on account of guaranteed interest to 31st December 1893, net revenue of guaranteed railways to 30th June 1893 appropriated towards its repayment and the balance (calendar year) (£).
108	21	Amount of surplus profits earned by guaranteed railways as calculated under the contracts for distribution between Government and railway companies to the end of 1880, and for each half-year from June 1881 to December 1893 (calendar year) (Rs.).
109	22	For all guaranteed railways for each year from 1870 to 1893 (calendar year) capital outlay, net revenue, interest, and excess or deficit (£).
109 & 110	23	Results of working the guaranteed railways and lines leased to or purchased from guaranteed companies and worked by those companies for 1893 (Rs.).

Page.	Statement Number.	Particulars.
CHAPTER VIII.		
125	24	Summary of the principal commodities carried, and the earnings therefrom, on the standard and metre gauge railways, for 1892 and 1893 (calendar year) (Rs.).
126-128	25	Mileage of all railways open on the 31st December 1893, and the mean mileage worked during the year.
130-133	26	Passenger traffic on the standard and metre gauge railways for 1893 (calendar year) (Rs.).
134-137	27	Goods traffic on the standard and metre gauge railways for 1893 (calendar year) (Rs.).
138-141	28	Unit milcages of passengers and goods carried on the standard and metre gauge railways for 1893 (calendar year).
142-145	29	Gross earnings, working expenses, and net earnings and results per train-mile and per cent. of gross earnings; also gross earnings per mean mile worked per week on the standard and metre gauge railways for 1893 (calendar year) (Rs.).
146-149	30	Working expenses in detail on the standard and metre gauge railways for 1893 (calendar year) (Rs.).
CHAPTER IX.		
156-159	31	Passenger fares and goods rates on the standard and metre gauge railways at the end of 1893 (pies).
CHAPTER X.		
169	32	Description of fuel used on the principal railways, average cost per ton, details of consumption, and average lead from source of supply.
CHAPTER XI.		
172 & 173	33	Number of employés on the standard and metre gauge railways open for traffic on the 31st December 1893.
174 & 175	34	Number of casualties during 1893 amongst European and East Indian employés on the standard and metre gauge railways open for traffic.
176	35	Number of depositors in State Railway Provident Fund Institutions, and the sums at their credit on the 31st December 1893.
177 & 178	36	Number of volunteers enrolled, and efficient, in all railway volunteer corps on the 31st March 1894.
180 & 181	37	Strength and cost of police on the standard and metre gauge railways open for traffic, and compensation payments due to thefts for 1893 (calendar year).
CHAPTER XII.		
182	38	Average number of locomotives in use, and the work obtained from each, on the principal railways, during the year 1893.
184-187	39	Number of engines and vehicles employed on the standard and metre gauge railways, and number of train-miles run during 1893.
CHAPTER XIV.		
193	40	Total number of persons killed and injured in connection with railway working during 1893 as compared with the average of the two previous years.
198	41	Total number of accidents to trains, classified under 26 causes, during 1893 as compared with the average of the two previous years, with the number killed and injured during 1893.
APPENDICES.		
200	A	Additions to open mileage from the 1st April 1893 to the 31st March 1894.
201	B	Extensions of line sanctioned from the 1st April 1893 to the 31st March 1894.
202-206	C	Gauge and classification of lines and lengths of line sanctioned and open for traffic on the 31st March 1894.
208-215	D	Progress made in the opening of railways year by year from the commencement.
216-223	E	Length of railways open for traffic at the end of each year from the commencement.
224-225	F	Total approximate earnings from the 1st January to the 31st March 1894, as compared with the actuals of the corresponding periods of 1892 and 1893.
226-239	G	Principal commodities carried, and the earnings therefrom, during the year 1893 as compared with the previous year.
240	H	Schedule of railways recently surveyed or lately put forward for consideration.

ADMINISTRATION REPORT

ON THE

RAILWAYS IN INDIA

FOR

1893-94.

CHAPTER I.

GENERAL.

Classification.—The classification of railways in the report for the year now under review remains practically unchanged. A complete list of the lines with particulars of gauge and classification, &c., will be found, as usual, in Appendix C., pages 202 to 206.

In other appendices and in the body of the report the railways classed under special gauges have been excluded, except, as explained in previous reports, where the main results of the working of all railways are noticed.

2. *Open Mileage.*—The following lengths of new line opened for public traffic between the 1st April 1893 and the 31st March 1894, compare with the results in the period 1st April 1892 to 31st March 1893, as follows :—

	Standard Gauge.	Metre Gauge.	Special Gauges.	Total.
	Miles.	Miles.	Miles.	Miles.
1893-94	247	182½	22¼	451¾
1892-93	210¼	279½	Nil	489¾

Further details of the additions made to the open mileage during 1893-94 will be found in the table given in Appendix A., page 200.

The total length of railway open on 31st March 1894 was as follows :—

	Standard Gauge.	Metre Gauge.	Special Gauges.	Total.
	Miles.	Miles.	Miles.	Miles.
State lines worked by Companies	3,422¾	5,182¾	—	8,605½
State lines worked by the State	3,876¼	1,294¼	28	5,198¾
Lines worked by guaranteed Companies	2,586¼	—	—	2,586¼
Assisted Companies	183¾	168½	51	403¼
Lines owned by Native States and worked by Companies.	402½	188½	71¾	662¾
Lines owned by Native States and worked by State railway agency.	124	—	22¼	146¼
Lines owned and worked by Native States	—	744	94	838
Foreign lines	—	58¾	—	58¾
Total	10,596¼	7,636¾	267	18,500
Total length open at end of previous year	10,345¼	7,451¼	245	18,042*

In addition to the above, there were 51¼ miles of steam tramways outside municipal limits.

* This total was slightly altered subsequent to the issue of the last report; the correct figures will be found in Appendix E. of the present report.

3. Subsequent to the close of the year 1893-94 and up to date (30th May) the additional mileage reported to have been opened to traffic is that of the metre gauge railway from Máyavaram to Mutupet, a distance of 54 miles.

4. *Extensions of Line sanctioned.*—During the year sanction was given to the construction of additional mileage to the extent of $154\frac{1}{2}$ miles, comprising:—

STANDARD GAUGE.		Miles.	Miles.
		—	—
<i>Commercial lines—</i>			
<i>British India—</i>			
East Indian	- - - - -	-	10
Indian Midland	- - - - -	-	$1\frac{1}{2}$
		—	$11\frac{1}{2}$
METRE GAUGE.			
Bengal and North-Western Company's section	-	6	
Rohilkund and Kumaon, Lucknow-Bareilly section	-	6	
<i>Native States—</i>			
Jetalsar-Rájkot	- - - - -	-	$\frac{1}{2}$
Oodeypore-Chitor	- - - - -	-	$60\frac{1}{2}$
Rájkot-Jamnagar	- - - - -	-	70
		—	143
TOTAL		- - -	$154\frac{1}{2}$

The extension of the Powayan, 2' 6" gauge, steam tramway from Kotar to Máiláni on the Rohilkund and Kumaon Railway, a distance of about $8\frac{1}{2}$ miles, was also authorised during the year.

Further details of the mileage sanctioned will be found in Appendix B., page 201.

5. *Total sanctioned mileage.*—After allowing for deductions on account of lines abandoned or in abeyance and minor corrections of mileage, &c., the total sanctioned mileage on the 31st of March 1894, omitting tramways, compares with the sanctioned mileage on the corresponding date of the previous year as follows:—

	Standard Gauge.	Metre Gauge.	Special Gauges.	Total.
	Miles.	Miles.	Miles.	Miles.
Total to end of March 1894	11,414 $\frac{1}{4}$	8,741 $\frac{1}{4}$	267	20,422 $\frac{1}{2}$
Total at end of the previous year	11,526 $\frac{3}{4}$	8,599	269 $\frac{1}{2}$	20,395 $\frac{1}{4}$
Increase over the previous year	—112 $\frac{1}{2}$	142 $\frac{1}{4}$	—2 $\frac{1}{2}$	27 $\frac{1}{4}$

The decrease under standard gauge is due partly to the withdrawal of $103\frac{1}{2}$ miles from the total sanctioned mileage of the Oudh and Rohilkhand (State) Railway, on account of the proposed change in the alignment of the extension beyond Rae Bareli, and partly to minor corrections in the mileage of existing lines.

6. *Important Works completed and in Progress.*—The first section of the East Coast (State) Railway, Bezváda to the south bank of the Godávári, 91 miles, was completed and opened for traffic on the 20th February 1893, and was made over to the Nizam's Guaranteed State Railways Company for working, as a temporary measure.

From the 1st January 1894 this section has been re-transferred to the State, and is now being worked by State agency along with the Rajahmundry-Vizianagram section and the Cocanada and Vizagapatam branches, $174\frac{1}{2}$ miles in all, which were completed and opened for public traffic on the 21st August. It is expected that another length of 200 miles of this railway will be ready for opening by the end of 1894-95.

The standard gauge line from Lucknow to Rae Bareli, a distance of $48\frac{1}{2}$ miles, was completed and opened for public traffic on the 26th October 1893. The chord line from Bareilly *via* Rámpur to Moradabad, which is being constructed on the standard gauge, is expected to be completed in June 1894.

A further section of the Godhra-Rutlam (standard gauge) Railway from Limkhérá to Dóhad, 20 miles, was completed and opened for public traffic on the 7th March 1894, and it is expected that the remaining section of the line to Rutlam will be ready for opening by the end of June 1894.

The Kolar Goldfields Railway, which is a standard gauge connection between the Madras Railway and the Kolar gold mines, was ready for opening at the end of the year.

The Pálanpur-Deesa (metre gauge) Railway, $17\frac{1}{4}$ miles, was completed and opened for public traffic on the 25th November 1893, and the Cooch Behar (2' 6" gauge) railway, $22\frac{1}{4}$ miles, on the 1st March 1894.

On the East Indian Railway the extension of the Barákar branch to the Jherriah coal-fields, including a bridge over the Barákar river, was sufficiently completed to admit of its being used for the carriage of coal over a distance of about 19 miles. Work was also well advanced on the Toposi colliery branch.

The first of the 85-lb. steel rails, which is to be the future standard of rails on the East Indian Railway, were laid during the year.

A bridge of boats has been constructed across the Mahanuddy at Sambalpur on the Bengal-Nágpur Railway in place of the ferry that previously existed there.

On the Mushkaf-Bolán (State) Railway work was actively prosecuted, and on the North Western (State) Railway the work of strengthening weak bridges was pushed forward. The strengthening of the Ravi Bridge having been completed, the bridge was re-opened for traffic in July. The erection of the new girders of the Jhelum Bridge was proceeded with, and a new bridge over the Haroo River near Lawrencepur was commenced. About 8 miles of line, with improved grades, were completed south of Ráwalpindi, of which 5 miles were brought into use during the year.

A colliery was opened in the neighbourhood of Sharigh on the Sind-Pishin section, and another at Bhaganwala near Dandot was started. These collieries are worked in connection with the North Western (State) Railway.

On the Eastern Bengal (State) Railway, the heavy reconstruction works necessitated by flood damages on the Dinagepore Branch were carried out. The doubling of the line between Baliyunge and Dock junction on the southern section was also completed, and the second line was opened on the 20th November.

Owing to financial pressure all works on the Langar division of the Mári-Attock Railway were stopped in June, but work was still in progress on the Campbellpore division.

An improved system of signalling arrangements was in progress on the Great Indian Peninsula Railway.

Some progress has been made on the Gauháti-Lumding section of the Assam-Bengal (metre gauge) Railway. Plate-laying has been started from Gauháti, Chittagong, and Chandpur.

The construction of the Mu Valley (metre gauge) Railway beyond Wuntho was steadily pushed on. Good progress was made on the Wuntho-Mohnyin section, and work started on the Mohnyin-Mogaung section. It is expected that 15 miles of the railway from Wuntho to Nankan will shortly be ready for opening.

Works were in progress throughout the year on the Nilgiri Railway, which is being constructed on the metre gauge, except on the portion about 3 miles from Kular at foot of the gháts to Burliar.

7. Principal Events.—Automatic vacuum brakes were brought into use on the mail trains of the East Indian Railway, and an accelerated mail service was introduced. Pintsch's system of lighting carriages with gas was also adopted on the mail trains. A similar system of lighting was sanctioned for the Great Indian Peninsula, the Bombay, Baroda and Central India, and the Madras Railways, and its introduction on State lines decided on.

From the 1st April 1893 the gradient improvement works on the North-Western (State) Railway between Jhelum and Ráwalpindi were amalgamated with the Mári-Attock Railway as a separate charge.

The exceptionally heavy rains from June to August 1893 caused serious damages to the line and works on the North-Western (State) Railway, and the railway bridge (3 spans of 150 feet) over the Haroo River was completely wrecked by floods.

The waggon ferry of the Bengal and North-Western Railway was transferred from Dígha Ghát to Mokameh Ghát, where it commenced working on the 7th of February 1893.

A connection for use in the dry weather only was formed between the Bengal and North-Western and the Oudh and Rohilkhand (State) Railways by the construction of a metre gauge line (about 6 miles in length) between the Gogra Ghát and the Bahramghat stations, the line being carried across the Gogra River by means of a pile and pontoon bridge.

On the 1st January 1893 the Guntakal-Dharmavaram section and on the 23rd April 1893 the Dharmavaram-Mysore frontier section of the Guntakal-Mysore Frontier Railway were transferred to the Southern Mahratta Railway Company for working.

The railway from Yesvantpur (Bangalore) was linked in with the Guntakal-Mysore Frontier Railway on the 15th April 1893, and trains have been working through since the 17th September.

On the first January 1894 a connection was established between the Southern Mahratta and the East Coast (State) Railways by the opening of the metre gauge track across the Kistna bridge into the station at Bezwada.

The maintenance of the Myohaung-Wuntho section of the Mu Valley (State) Railway, together with all capital works in progress, was taken over by the Burma (State) Railway on the 1st July 1893.

A conference of railway delegates was held at Simla in September and October 1893, at which all the principal railways were represented. There were a large number of subjects under discussion chiefly bearing on technical questions affecting the traffic and working of the lines.

8. *Cost.*—Including unfinished lines, the total capital expenditure on all railways up to the 31st December 1893 amounted to Rs. 240·90 crores, thus :

	Standard Gauge.	Metre Gauge.	Special Gauges.	Unclassified Expenditure.	Total.
	Rs.	Rs.	Rs.	Rs.	Rs.
Crores	181·52	57·78	0·87	0·73	240·90

In addition to this, Rs. 0·64 crores were expended on collieries and on surveys completed and in progress, making up the total expenditure of railways under all heads to Rs. 241·54 crores.† Of this, the capital outlay on open lines, including steam-boat service and suspense accounts, amounted to :

	Standard Gauge.	Metre Gauge.	Special Gauges.	Total.
	Rs.	Rs.	Rs.	Rs.
Crores	176·67	55·65	0·86	233·18

The average cost‡ per mile of railway open was as follows :

	Standard Gauge.	Metre Gauge.	Special Gauges.
	Rs.	Rs.	Rs.
	1,60,971§	70,584§	31,627

* Including interest on capital, which in the case of the Bengal and North-Western, the Delhi-Umballa-Kalka, the Rohilkund and Kumaon (Lucknow-Bareilly section) and the Bengal Dooars Railways was charged to the capital account of these lines during construction. This was formerly treated as a separate item of expenditure, but is now included with the actual cost of construction.

† As per details in Chapter VI., paragraph 1	Rs.
	249·13 crores.
Add—Calcutta Port Commissioners' Railway, not included in Chapter VI.	0·59 „
	249·72 „

Deduct—Cherra-Companyganj Railway, treated as a steam tramway for statistical purposes	0·08
Total difference as per footnote § in Statement No. 10, pages 80 and 81	8·10
	8·18 „
Total	241·54 „

‡ An outlay charged to final heads of account, excluding steam-boat.

§ The mileage on which this is calculated includes 1,151 miles of line laid with two or more tracks, for details see Statement No. 25, pages 126 to 128.

The cost per mile of single track, including sidings, being—

	—	—	—	
	Rs. 1,24,279	Rs. 62,777	Rs. 30,013	

9. *Graphic Diagram.*—The graphic diagram published with this report shows the open mileage, capital outlay, gross earnings, working expenses, and net earnings of all railways from the commencement of operations to the end of 1893.

10. *Gross Earnings.*—The gross earnings during the calendar year were Rs. 24,08,42,292 against Rs. 23,22,92,533, during 1892, as follows:—

	Standard Gauge.	Metre Gauge.	Special Gauges.	Total.
	Rs.	Rs.	Rs.	Rs.
1892 - - - -	17,32,97,997	5,77,19,982	12,74,554	23,22,92,533
1893 - - - -	17,82,77,906	6,12,79,625	12,84,761	24,08,42,292
Increase - - -	46,79,909	35,59,643	10,207	85,49,759

Of the total gross earnings during 1893, 74·02 per cent. were earned by the standard gauge lines, 25·45 per cent. by the metre gauge, and the balance, 0·53 per cent., by the special gauge lines. The following figures show the distribution of the earnings under the main heads of account:—

	Standard Gauge.	Metre Gauge.	Special Gauges.	Total.
	Rs.	Rs.	Rs.	Rs.
Coaching - - - -	5,73,17,822	2,40,24,410	5,99,089	8,19,41,321
Goods - - - -	11,64,83,875	3,50,11,118	6,67,805	15,21,62,798
Miscellaneous, including steamboat	44,76,209	22,44,097	17,867	67,38,173
Total - - - -	17,82,77,906	6,12,79,625	12,84,761	24,08,42,292

11. *Passenger Traffic.*—The number of passengers carried as compared with the previous year was as follows:—

	Standard Gauge.	Metre Gauge.	Special Gauges.	Total.
	No.	No.	No.	No.
1892 - - - -	83,577,278	43,014,450	796,308	127,388,036
1893 - - - -	88,454,834	46,245,635	819,978	135,520,447
Increase - - -	4,877,556	3,231,185	23,670	8,132,411

and the passenger miles:—

	Miles.	Miles.	Miles.	Miles.
1892 - - - -	3,538,134,974	1,708,759,705	20,744,003	5,267,638,682
1893 - - - -	3,757,493,870	1,822,152,820	21,988,877	5,601,635,567
Increase - - -	219,358,896	113,393,115	1,244,874	333,996,885

The passenger earnings were:—

	Standard Gauge.	Metre Gauge.	Special Gauges.	Total.
	Rs.	Rs.	Rs.	Rs.
1892 - - - -	4,75,62,784	2,10,38,413	5,13,407	6,91,14,604
1893 - - - -	5,02,74,668	2,21,64,432	5,17,615	7,29,56,715
Increase - - -	27,11,884	11,26,019	4,208	38,42,111

The earnings from other coaching traffic were as follows :—

	Rs.	Rs.	Rs.	Rs.
1892 - - - - -	65,83,686	16,71,659	74,009	83,29,354
1893 - - - - -	70,43,154	18,59,978	81,474	89,84,606
Increase - - - - -	4,59,468	1,88,319	7,465	6,55,252

12. *Goods Traffic*.—The aggregate tonnage of goods, material, and live-stock carried was 28,851,531 tons, against 26,334,818 tons in 1892, as follows :—

	Standard Gauge.	Metre Gauge.	Special Gauges.	Total.
	Tons.	Tons.	Tons.	Tons.
1892 - - - - -	19,018,611	7,192,322	123,885	26,334,818
1893 - - - - -	21,242,685	7,484,701	119,343	28,846,729
Difference - - - - -	+ 3,224,074	+ 292,379	— 4,542	+ 2,511,911

The goods ton-mileage being :—

	Miles.	Miles.	Miles.	Miles.
1892 - - - - -	3,337,875,655	891,496,836	4,066,597	4,233,439,088
1893 - - - - -	3,488,106,230	933,060,045	3,953,478	4,425,119,754
Difference - - - - -	+ 150,230,575	+ 41,563,209	— 113,118	— 191,680,666

The goods earnings were :—

	Standard Gauge.	Metre Gauge.	Special Gauges.	Total.
	Rs.	Rs.	Rs.	Rs.
1892 - - - - -	11,46,07,085	3,24,78,134	6,67,261	14,77,52,480
1893 - - - - -	11,64,83,875	3,50,11,118	6,67,805	15,21,62,798
Increase - - - - -	18,76,790	25,32,984	544	44,10,318

Excluding the traffic of the special gauge lines, the total quantity of general merchandise carried was 17,094,576 tons, or 5·86 per cent. more than in 1892, and the freight received aggregated Rs. 13,07,00,439, being more by 2·96 per cent.

Including materials and stores carried for home lines, military stores, and coal and live-stock for the public, the gross weight lifted showed an increase of 2,516,453 tons, or 9·60 per cent., with an increase in the earnings of Rs. 44,09,774, or 3·00 per cent.

13. *Approximate Earnings, First Quarter, 1894*.—The earnings for the first quarter of 1894 show on the whole an increase compared with the earnings for the corresponding quarters of 1892 and 1893 :—

	Standard Gauge.	Metre Gauge.	Special Gauges.	Total.
	Rs.	Rs.	Rs.	Rs.
1892 - - - - -	4,94,54,347	1,44,62,871	1,72,535	6,40,89,753
1893 - - - - -	4,89,47,654	1,57,31,217	1,65,762	6,48,44,633
1894 - - - - -	5,33,98,171	1,58,23,204	1,72,420	6,93,93,795

The figures relating to each railway separately will be found in Appendix F., pages 224 and 225.

N.B.—The slight differences in the figures for 1892 as compared with those given in the previous report are due to audited figures having been adopted in the present report. See also Statement No. 18, pages 102 and 103.

14. *Working Expenses.*—The total working expenses amounted to Rs. 11,34,77,280, against Rs. 10,90,34,766 in the previous year, as follows :—

	Standard Gauge.	Metre Gauge.	Special Gauges.	Total.
	Rs.	Rs.	Rs.	Rs.
1892 - - - - -	7,90,50,850	2,92,53,802	7,30,114	10,90,34,766
1893 - - - - -	8,14,41,386	3,13,24,150	7,11,744	11,34,77,280
Difference - - - - -	— 23,90,536	+ 20,70,348	— 18,510	+ 44,42,514

The percentage of expenses on gross earnings under the several departmental heads was as follows :—

	Standard Gauge.	Metre Gauge.	Special Gauges.	Total.
Maintenance - - - - -	12·08	12·52	12·10	12·20
Locomotive - - - - -	15·20	17·06	17·10	15·69
Carriage and waggon - - - - -	4·21	4·34	4·91	4·25
Traffic - - - - -	7·50	8·14	9·99	7·67
General - - - - -	4·37	6·76	9·03	5·00
Steam-boat, special and miscellaneous, &c. - - - - -	1·83	1·89	2·03	1·84
Contribution to Provident Fund - - - - -	0·49	0·41	0·24	0·47
Total - - - - -	45·68	51·12	55·40	47·12

15. *Net Earnings.*—The net earnings realised were Rs. 12,73,65,012, against Rs. 12,32,57,767 in 1892, as under :—

	Standard Gauge.	Metre Gauge.	Special Gauges.	Total.
	Rs.	Rs.	Rs.	Rs.
1892 - - - - -	9,42,47,147	2,84,66,180	5,44,440	12,32,57,767
1893 - - - - -	9,68,36,520	2,99,55,475	5,73,017	12,73,65,012
Increase - - - - -	25,89,373	14,89,295	28,577	41,07,245

16. *Return on Capital.*—The statistical return on the capital expenditure* on open lines, including steamboat service and suspense accounts, compares as follows :—

	Standard Gauge.	Metre Gauge.	Special Gauges.	Average of all Lines.
1892 - - - - -	5·47	5·25	6·97	5·42
1893 - - - - -	5·48	5·38	6·63	5·46

17. *Financial Results.*—The financial results to the State of working the Indian railways for 1893–94 are not yet accurately known, but the following statement gives the figures of the revised estimate for 1893–94 as compared with the actual figures for the preceding year. These last-named figures are given in detail in Statements Nos. 1 to 4 at the end of this chapter.

* The capital expenditure here referred to is that shown in Chapter VI., Statement No. 16, pages 92 and 93.

N.B.—The slight differences in the figures for 1892 as compared with those given in the previous report are due to audited figures having been adopted in the present report. See also Statement No. 18, pages 102 and 103.

	1892-93.	1893-94.
Losses—	Rs.	Rs.
Guaranteed railways - - - -	77,61,460	71,78,000
State lines leased to companies, open and unopen - - - -	74,68,720	76,74,000
State railways, military, open - - - -	57,19,000	53,11,000
State railways, military, unopen - - - -	3,87,170	6,13,000
State railways, commercial, open - - - -	68,65,480	43,99,000
State railways, commercial, unopen - - - -	24,13,390	25,45,000
	3,06,15,220	2,77,20,000
Gains—		
State railways worked by companies - - - -	126,20,590	1,34,40,000
Apparent net loss - - - -	1,79,94,630	1,42,80,000
Add—Charges debited to—		
39—Guaranteed railways—land and supervision - - - -	2,94,230	3,49,000
40—Subsidised railways—land, interest, and subsidies - - - -	2,90,260	2,29,000
41—Miscellaneous railway expenditure - - - -	— 1,08,600	11,12,000
Total apparent loss - - - -	1,84,70,520	1,59,70,000

The interest charges for the East Indian, Eastern Bengal (State), and North-Western (State) Railways for 1892-93 include annuities paid in England, which comprise a contribution of about 36* lakhs of rupees for sinking funds, which will redeem the capital at the expiry of the periods during which the annuities are to run. When this contribution has been deducted from the charges incurred during the year on the railway account, the loss to the State during 1892-93 in its connection with the entire Indian railway system will stand at about 149 lakhs of rupees. In the same way, the figures for 1893-94 contain a similar contribution on account of sinking funds, which amounts to about 38† lakhs, so that the *net loss* to the State in that year will probably be about 121½ lakhs of rupees.

If interest on lines under construction were also excluded from the above figures, the gains and losses to the State in its connection with the entire Indian railway system in 1892-93 would be a *net loss* of about 117½ lakhs, and in 1893-94 the results would show a *net loss* of about 84½ lakhs of rupees.

The loss on guaranteed railways is attributable to the high rate of the interest guaranteed; to the increased cost, as compared with previous years, of remitting the interest at the very low rate obtained, and estimated to be obtained, for Council bills on India; and to the fact that the companies' share of surplus profits is, under the contracts, calculated on the supposition that earnings could be remitted in payment of interest at a rate of 1s. 10d. the rupee.

The State has to continue to pay interest at the guaranteed rates until the contracts terminate, and it is consequently unable to obtain any advantage from cheaper money and the improved credit of the country; that is to say, where the State could now raise money at a little over 3 per cent. to pay off loans raised at higher rates of interest, it has to continue paying interest at a high average rate of about 4¾ per cent. on the capital raised by the guaranteed companies; and now, owing to the fall in exchange, the amount of rupees which have to be remitted to England to pay the sterling interest charges is equivalent to a payment of interest of about 7 per cent. on the total capital raised converted at the contract rate of exchange.

Had it been possible to remit the earnings at the contract rates of exchange, the interest in 1892-93 would have been covered by Rs. 2,34,29,970, and the guaranteed railways would have shown a surplus of Rs. 31,94,920 in that year, instead of a loss of Rs. 77,61,460 as shown above.

The direct annual loss or gain to the State from railway outlay from 1858-59 up to 1871-72, and during each financial year from 1872-73 to 1893-94, will be found in Statement No. 5 on pages 24 and 25.

	Lakhs.		Lakhs.
* East Indian Railway - - - -	23½	† East Indian Railway - - - -	24½
Eastern Bengal Railway (State) - - - -	2½	Eastern Bengal Railway (State) - - - -	2½
North-Western (State) - - - -	10½	North-Western Railway (State) - - - -	11
	36		38

STATEMENT No. 1.
GUARANTEED RAILWAYS.
RESULTS to the STATE of working for the OFFICIAL YEAR 1892-93.

Serial Number.	RAILWAY.	Capital raised to the end of 1892-93.	Capital withdrawn to the end of 1892-93.	INTEREST CHARGES FOR 1892-93.				Net Earnings for 1892-93, less Share of Surplus Profits paid to Companies.	Gain or Loss (+ or -).
				Sterling (paid in England).		Interest paid in India.	Total.		
				Amount.	Converted at the Average Rate of Exchange.				
XVIII	Great Indian Penin- sula.	£ 25,736,533	£ 25,437,133	£ 1,196,289	Rs. 1,91,60,070	Rs. 21,810	Rs. 1,91,81,880	Rs. 1,54,10,500	+ 37,71,380
XIX	Bombay, Baroda and Central India.	8,807,219	8,768,072	416,526	66,71,180	2,850	66,74,030	66,91,220	+ 17,190
XX	Madras - - -	11,069,644	11,002,204	532,482	85,28,370	2,070	85,30,440	45,23,170	- 40,07,270
	TOTAL - -	45,613,396	45,207,409	2,145,297	3,43,59,620	26,730	3,43,86,350	2,66,24,890	- 77,61,460 (a)

(a) This loss does not include charges for land and controlling establishment in connection with guaranteed enterprise (amounting to Rs. 2,94,230) met by Government in 1892-93.

STATEMENT No. 2.
STATE LINES LEASED TO COMPANIES.
 (Imperial Lines constructed with capital raised by, or supplied to Companies under contract with the Secretary of State.)

RESULTS to the STATE of working for the OFFICIAL YEAR 1892-93.

Serial Number.	RAILWAY.	Subscribed Capital, including Advances by the Secretary of State under Act 51 Vic., cap 5, to the end of 1892-93.	Capital Outlay to 31st of March 1893.	INTEREST CHARGES FOR 1892-93.				Net Earnings for 1892-93, less Share Paid to Companies.	Gain or Loss (+ or -)
				Sterling (paid in England).		Paid in India.	Total.		
				Amount.	Converted at the Average Rate of Exchange.				
II	Bengal-Nagpur - -	£ 7,205,781	Rs. 9,67,59,930	£ 252,500	Rs. 40,44,100	Rs. 1,94,150	Rs. 42,38,250	Rs. 29,35,780	Rs. -13,02,470
III	Indian Midland - -	7,101,116	8,96,05,600	253,441	40,59,180	—	40,59,180	15,22,680	-25,36,500
XIII	Bengal Central - -	1,000,000	1,00,77,920	33,750	5,40,550	—	5,40,550	2,41,980	-2,98,570
XXXIV	Rohilkund and Kumaon (Lucknow - Bareilly section)	160,837	†31,82,550	—	—	1,06,930	1,06,930	2,67,550	(a) +1,60,620
	Outlay by the State on the Bareilly- Pilibhit and Luck- now-Sitapur-Sera- mau railways prior to transfer	—	51,21,140	—	—	2,04,850	2,04,850	—	(a) -2,04,850
XXXVI	Southern Mahratta -	*6,603,957	*7,82,83,740	220,704	35,34,850	—	35,34,850	13,94,070	(b) -20,40,780
	Outlay on Bellary- Kistna section by State	—	1,65,77,530	—	—	6,63,050	6,63,050	—	(b) -6,63,050
XXXVIII	Southern Mahratta (Mysore section)	1,224,000	1,42,06,730	48,000	7,68,780	—	7,68,780	5,24,130	} - 65,840
	Refund by the Mysore Darbar of net charge for interest on capital expended on the Mysore Railway	—	—	—	—	-1,78,830	-1,78,830	—	
XLI	Assam-Bengal - -	1,313,372	58,62,028	26,055	4,17,300	—	4,17,300	—	-4,17,300
	TOTAL - -	24,009,563	31,66,77,168	834,450	1,33,64,760	9,90,150	1,43,54,910	68,86,190	-74,68,720

(a) The net loss to the State on the Lucknow-Bareilly railway amounts to Rs. 44,230. The interest on the capital outlay by Government to date of transfer is not shown in the gain of Rs. 1,60,620.

(b) The outlay on the Bellary-Kistna section by the State, representing the amount expended up to 31st December 1887, and liabilities incurred up to that date, and subsequent law charges was not taken over by the Company, so that the interest on this capital must be taken into account in stating the loss to the State on the Southern Mahratta railway, which amounts to Rs. 28,03,830.

* Including the Bellary-Kistna railway since the date of transfer from the State, viz., the 1st of January 1888.

† Including outlay from advances made in India.

STATEMENT No. 3.—STATE RAILWAYS (COMMERCIAL).
RESULTS to the STATE of working for the OFFICIAL YEAR 1892-93.

Serial Number.	RAILWAY.	Capital Outlay to the 31st of March 1893.	INTEREST CHARGES FOR 1892-93.				N et Earnings for 1892-93.	Gain or Loss (+ or -).
			Sterling (paid in England) Interest and Annuity.		Charged in India.	Total.		
			Amount.	Converted at the Average Rate of Exchange.				
	COMMERCIAL LINES.	Rs.	£	Rs.	Rs.	Rs.	Rs.	Rs.
	(1.) <i>Open for Traffic.</i>							(b)
	Patna-Gya (b) - - -	—	—	—	—	—	1,63,470	+ 1,63,470
IX	North-Western (State)—	(a)						
	Commercial Section -	32,42,40,520	571,820	91,58,410	72,73,350	1,64,31,760	84,41,130	-79,90,630
X	Hyderabad-Umarkot - -	16,30,420	—	—	56,780	56,780	—120	-56,900
XI	Oudh and Rohilkhand (State)	10,34,41,590	351,927	56,36,550	7,180	56,43,730	47,72,440	-8,71,290
XII		(a)						
& XLIII	Eastern Bengal (State)†	11,37,77,950	155,613	24,92,340	30,84,140	55,76,480	62,13,260	+ 6,36,780
XLIV	Burma (State) - - -	5,25,81,830	—	—	20,97,710	20,97,710	34,32,590	+ 13,34,880
	Cherra-Companyganj - -	7,78,300	—	—	31,040	31,040	950	-30,090
LXII	Jorhát - - -	7,88,990	—	—	30,810	30,810	11,460	-19,350
	Umaria Colliery - - -	10,37,700	—	—	40,760	40,760	33,450	-7,310
	Warora Colliery - - -	15,64,340	—	—	62,370	62,370	37,330	-25,040
	Total open State Rail- ways (Commercial) }	59,98,41,640	1,079,360	1,72,87,300	1,26,84,140	2,99,71,440	2,31,05,960	-68,65,480
	(2.) <i>Unopen Lines.</i>							
V	Godhra-Rutlam - - -	92,42,530	—	—	2,43,030	2,43,030	—	-2,43,030
XV	East Coast - - -	2,85,41,030	—	—	8,94,920	8,94,920	—	-8,94,920
XXXVI	Pálanpur-Deesa - - -	1,14,330	—	—	2,320	2,320	—	-2,320
XLI	Assam-Bengal - - -	1,42,310	—	—	12,420	12,420	—	-12,420
XLII	Máyavaram-Mutupet - -	16,31,760	—	—	46,890	46,890	—	-46,890
XLV	Mu Valley - - -	1,52,11,640	—	—	5,21,040	5,21,040	-3,08,570	-8,29,610
	Lucknow-Rae Bareli-Benares	16,32,890	—	—	39,960	39,960	—	-39,960
	Bareilly-Rámpur-Moradabad	27,04,480	—	—	57,820	57,820	—	-57,820
	Meiktila Branch - - -	2,88,310	—	—	6,010	6,010	—	-6,010
	Guntakal-Hindupur - -	57,58,790	—	—	1,38,250	1,38,250	—	-1,38,250
	Stores - - -	15,85,350	—	—	57,960	57,960	—	-57,960
	Nágpur-Chhattisgarh Depre- ciation Account	4,97,300	—	—	25,010	25,010	—	-25,010
	Vizagapatam-Raipur* -	2,45,040	—	—	9,810	9,810	—	-9,810
	Biláspur-Etáwáh Survey* -	75,140	—	—	3,000	3,000	-13,210	-16,210
	Ránaghat-Bhagwangola* -	3,02,440	—	—	12,090	12,090	—	-12,090
	Southern Máhratta† - -	5,27,070	—	—	21,080	21,080	—	-21,080
	Total unopen State Rail- ways (Commercial) - }	6,85,30,410	—	—	20,91,610	20,91,610	-3,21,780	-24,13,390
	TOTAL OPEN AND UN- OPEN STATE RAIL- WAYS (COMMERCIAL) }	66,83,72,050	1,079,360	1,72,87,300	1,47,75,750	3,20,63,050	2,27,84,180	-92,78,870

	Rs.	North-Western (State) Railway.	Rs.	Eastern Bengal (State) Railway.	Rs.
(a) Capital as above—					
Commercial section - - -	32,42,40,520				
Military section - - -	12,13,67,560				
		44,56,08,080		11,37,77,950	
Deduct premium - - -		2,93,38,040		1,13,64,370	
Amount shown as capital in the published finance accounts of the Government of India - - -		41,62,70,040		10,24,13,580	

(b) The Patna-Gya railway was amalgamated with the East Indian railway on 1st July 1892. The capital outlay and interest charges for the year, together with the net receipts from date of transfer, are included in the East Indian railway. The net receipts entered here are the transactions from April to June 1892.

* Abandoned or in abeyance.

† Represents amount of depreciation, etc., allowed on works and stores on transfer to the company.

‡ Including the Bársoi-Kissengunge branch.

STATEMENT No. 3A.
STATE RAILWAYS (MILITARY).

Serial Number.	RAILWAY.	Capital Outlay to the 31st of March 1893.	INTEREST CHARGES FOR 1891-92.				Net Earnings for 1891-92.	Gain or Loss (+ or -)
			Sterling (paid in England) Interest and Annuity.		Charged in India.	Total.		
			Amount.	Converted at the Average Rate of Exchange.				
		Rs.	£	Rs.	Rs.	Rs.	Rs.	
IX	MILITARY LINES. (1.) <i>Open for Traffic.</i>							
	North-Western (State) :— Military section* - - -	12,13,67,560	—	—	48,58,280	48,58,280	-8,60,720	-57,19,000
	Total open State Rail- ways (Military) - - }	12,13,67,560	—	—	48,58,280	48,58,280	-8,60,720	-57,19,000
	(2.) <i>Unopen Lines.</i>							
XVI	Mushkaf-Bolán - - -	45,11,830	—	—	1,27,040	1,27,040	—	-1,27,400
XVII	Mári-Attock - - -	29,90,110	—	—	77,390	77,390	—	-77,390
	Sind Pishin — Petroleum Operations.	1,43,810	—	—	5,470	5,470	—	-5,470
	Frontier Railways, Reserve Material.	42,19,480	—	—	1,62,770	1,62,770	—	-1,62,770
	Pesháwar Railway Reserve -	3,67,760	—	—	14,500	14,500	—	-14,500
	Total unopen State Railways (Military) }	1,22,32,990	—	—	3,87,170	3,87,170	—	-3,87,170
	TOTAL OPEN AND UN- OPEN STATE RAIL- WAYS (MILITARY) - - }	13,36,00,550	—	—	52,45,450	52,45,450	-8,60,720	-61,06,170
	GRAND TOTAL STATE RAILWAYS (COM- MERCIAL AND MILI- TARY) - - -	80,19,72,600	1,079,360	1,72,87,300	2,00,21,200	3,73,08,500	2,19,23,460	-1,53,85,040

* Including the line from Ruk to Chaman, and on the Quetta loop; Sibi to Bostán *vid* Bolán and Quetta; also the Sind-Sagar line from Lála Músa to Sher Shah junction with branches; and the lines from Golra to Khúsálgarh and Muzaffarabad junction to Sher Shah, the late Salt branch, metre gauge, and the Mianwali Mári branch railway.

STATEMENT No. 4.

STATE RAILWAYS WORKED BY COMPANIES.

RESULTS to the STATE of working lines constructed or purchased by GOVERNMENT and worked by COMPANIES for the OFFICIAL YEAR 1892-93.

Serial Number.	RAILWAY.	Capital outlay to the 31st of March 1893.	INTEREST AND ANNUITY CHARGES FOR 1891-92.				Net Earnings (less surplus Profits paid to Shareholders) for 1892-93.	Gain or Loss (+ or -).
			Sterling (paid in England).		Paid in India.	Total.		
			Amount.	Converted at the Average Rate of Exchange.				
		Rs. (a)	£	Rs.	Rs.	Rs.	Rs.	Rs.
I	East Indian - -	40,23,63,790	1,482,505	2,37,44,180	25,62,060	2,63,06,240	3,28,17,690	+ 65,11,450
IV	Bhopal-Itarsi (British Section).	19,46,050	—	—	72,450	72,450	56,400	-16,050
VI	Wardha coal - -	49,87,690	—	—	1,99,380	1,99,380	34,100	-1,65,280
VII	Dhond-Manmád -	1,10,87,040	—	—	4,42,870	4,42,870	3,28,340	-1,14,530
VIII	Bezwa Extension -	14,21,530	—	—	56,760	56,760	28,400	-28,360
XXXIII	Bengal and North- Western — Tirhoot Section.	2,48,59,030	—	—	9,69,400	9,69,400	14,30,010	+ 4,60,610
XXXV	Raipurana-Malwa -	13,05,86,170	—	—	52,61,420	52,61,420	1,22,88,930	+ 70,27,510
XL	South Indian (including the Villupuram Guntakal and Nel- lore Branch).	8,21,03,300	181,878	29,13,000	10,47,630	39,60,630	29,06,870	-10,54,760
	Total -	65,93,54,690	1,664,383	2,66,57,180	1,06,11,970	3,72,69,150	4,98,89,740	+1,26,20,590

(a) Capital as above
Deduct premium - - - - - 40,23,63,790
- 6,56,00,000

Amount shown as capital in the published finance accounts of the Government of India - 33,68,63,790

(b) Including Rs. 60,570 expended by the State on the survey of this line, but not included in the capital account of the Railway.

(c) Capital as above
Deduct premium - - - - - 8,21,03,300
- 98,92,770

Amount shown as capital in the published finance accounts of the Government of India - 7,22,10,530

STATEMENT
Direct ANNUAL GAIN or Loss to the

Year.	Guaranteed Railways (excluding East Indian, Eastern Bengal, Sind, Punjab and Delhi, Oudh and Rohilkhand, and South Indian Railways from 1872-73).				State Lines worked by the State.			
	Capital withdrawn for Expenditure to end of each Year.	Net Traffic Receipts, less Moieties of Surplus Profits paid to Companies.	Guaranteed Interest.	Loss to the State.	Capital expenditure.	Net Receipts.	Interest and Annuity. (d)	Loss to the State.
	£	Rx.	Rx.	Rx.	Rx.	Rx.	Rx.	Rx.
1858-59 to 1871-72	—	21,486,092	38,910,797	17,424,705	1,552,619	—6,164	138,566	144,730
1872-73	40,354,274	1,146,031	2,160,243	1,014,212	19,845,798	11,580	1,005,949	994,369
1873-74	39,402,681	1,218,075	2,185,593	967,518	22,005,093	315,538	1,084,955	769,417
1874-75	40,794,561	1,309,073	2,204,254	895,181	23,643,205	587,818	1,185,596	597,778
1875-76	40,531,949	1,490,240	2,263,668	773,428	26,205,423	821,021	1,297,668	476,647
1876-77	40,679,454	1,899,241	2,386,500	487,259	28,538,284	566,967	1,448,165	881,198
1877-78	41,301,759	2,327,993	2,381,834	3,841	31,429,069	931,597	1,539,457	607,860
1878-79	41,682,705	1,619,109	2,473,255	854,146	33,178,146	805,422	1,693,385	887,963
1879-80	41,764,715	1,448,896	2,481,400	1,032,504	36,073,275	968,613	1,777,260	808,647
1880-81	41,742,884	1,722,573	2,488,599	766,026	39,794,470	1,370,332	1,889,329	528,997
1881-82	42,075,110	2,343,565	2,496,263	152,698	41,033,885	1,120,266	2,000,945	880,679
1882-83	42,168,326	2,132,401	2,533,920	401,519	42,615,781	1,256,415	2,133,951	877,536
1883-84	42,029,697	2,137,094	2,539,530	402,436	45,068,279	1,360,863	2,155,659	794,796
1884-85	43,096,508	2,293,615	2,588,185	294,520	(a) 49,315,639	1,538,771	2,244,386	705,565
1885-86	43,682,117	2,503,229	2,761,684	258,455	(b) 57,441,360	1,928,223	2,568,277	640,054
1886-87	43,529,450	2,662,601	2,908,441	245,840	62,123,459	1,797,584	2,873,116	1,075,532
1887-88	43,837,158	2,494,404	3,007,228	512,824	62,187,865	1,545,074	3,063,971	1,518,897
1888-89	44,343,227	2,742,916	3,105,916	363,000	(c) 68,551,352	1,829,123	3,243,347	1,414,224
1889-90	44,628,363	2,521,976	3,084,675	562,699	70,228,102	2,322,253	3,203,214	880,961
1890-91	45,091,263	2,841,185	2,844,547	3,362	71,980,689	2,319,183	3,150,571	831,888
1891-92	45,137,155	2,770,064	3,069,430	299,366	75,113,334	2,677,615	3,355,444	677,829
1893-94	45,207,409	2,662,489	3,438,635	776,146	78,398,337	2,177,320	3,681,650	1,504,330
1893-94 (revised estimate)	45,313,109	2,826,600	3,554,440	717,800	81,192,837	2,551,200	3,823,500	1,272,300
TOTAL	—	68,599,462	97,808,947	29,209,485	—	30,796,614	50,568,311	19,771,697

(a) Includes capital expenditure on Eastern Bengal Railway, prior to purchase as under:

Share capital at time of purchase	£
Premium on ditto	2,255,480
Debentures and debenture stock	1,136,437
	1,023,668
Total	4,415,575

(b) Includes capital expenditure on the Sind, Punjab, and Delhi Railway prior to purchase as under:—

Share capital at time of purchase	£
Premium on ditto	11,075,320
	2,833,904
Total	14,009,124

(c) Includes 10,336,040/- on account of purchase money of the Oudh and Rohilkhand Railway.

(d) Interest on capital outlay calculated at 4 per cent., except on 1,000,000/- lent by His Highness the Maharaja Holkar for the construction of the Holkar State Railway, on which 4½ per cent. is paid by the State.

(e) Includes the following amounts in connection with the acquisition of the South Indian Railway by the State.

Debt created for redemption of share capital	£
Debenture stock taken over	4,197,557
Debentures taken over	425,000
	1,070,000
Total	5,692,557

This figure differs from the purchase money entered in the Finance and Revenue accounts of the Government of India, in which 1,000,000/- received from the company is treated as reduction of debt.

NOTE.—The figures from 1872-73 include "Loss by exchange," and the results shown against State railways from 1880-81 and onwards include certain annually increasing payments towards sinking funds for redemption of capital.

No. 5.

STATE from RAILWAY OUTLAY since 1858.

State Lines worked by Companies, excluding the East Indian Railway.				East Indian Railway.				Loss to the State on working the Railway System of India.	Other Charges.	Total Loss to the State.
Capital expended.	Net Receipts.	Interest and Annuity. (f)	Loss to the State.	Capital expended.	Net Traffic Receipts, less Surplus paid to Shareholders.	Interest and Annuity.	Gain to the State.			
Rx.	Rx.	Rx.	Rx.	Rx.	Rx.	Rx.	Rx.	Rx.	Rx.	Rx.
403,400	—	14,867	14,867	—	(h)	(h)	(h)	17,584,302	2,448,644	20,032,946
2,941,679	48,578	216,878	168,300	30,920,008	1,584,830	1,586,905	-2,075	2,178,956	177,644	2,356,600
4,646,812	48,436	262,658	214,222	31,164,161	1,943,933	1,613,216	330,717	1,620,440	167,428	1,787,868
6,560,347	96,974	321,409	224,435	30,529,456	1,792,600	1,621,238	171,362	1,546,032	62,765	1,608,797
8,433,562	159,423	380,382	220,959	30,582,522	1,610,338	1,637,973	42,365	1,428,669	130,091	1,558,760
9,734,320	189,818	433,016	243,198	30,600,227	2,252,092	1,741,830	510,262	1,101,393	44,814	1,146,207
11,502,783	299,083	489,365	190,282	30,759,994	2,455,714	1,715,335	740,379	61,604	88,546	150,150
13,462,694	241,118	578,218	337,100	31,331,420	1,928,410	1,818,712	109,698	1,969,511	106,181	2,075,692
15,499,419	269,817	658,518	388,701	37,779,596	2,563,667	1,821,323	742,344	1,487,508	82,967	1,570,475
17,282,260	334,639	735,991	401,352	38,242,989	2,421,288	1,653,794	767,494	928,881	115,322	1,044,203
19,288,660	635,334	811,465	176,131	38,733,469	3,085,081	2,021,697	1,063,384	146,124	139,831	285,955
20,521,702	777,084	914,126	137,042	38,883,838	2,547,702	2,085,630	462,072	954,025	352,169	1,306,194
22,807,353	967,911	1,042,126	74,215	39,110,477	3,030,972	2,072,270	958,702	312,745	-7,506	305,230
27,262,817	915,207	1,170,640	255,433	39,404,979	2,505,529	2,103,200	402,329	853,189	198,562	1,051,751
30,053,692	1,103,987	1,335,277	231,290	39,660,122	2,849,305	2,228,267	621,038	508,761	222,952	731,713
34,252,218	1,246,064	1,602,842	356,778	39,823,790	3,015,407	2,320,048	695,359	982,791	205,877	1,188,668
38,865,035	1,237,599	1,764,332	526,733	39,884,454	2,974,710	2,391,733	582,977	1,975,477	146,909	2,122,386
42,998,060	1,464,831	2,062,993	598,162	39,888,069	2,811,607	2,526,563	285,044	2,090,342	143,050	2,233,392
46,235,529	1,584,798	2,164,590	579,792	39,955,263	2,821,099	2,401,042	420,057	1,603,395	249,206	1,852,601
49,691,712	1,824,738	2,203,731	378,993	39,942,431	2,974,118	2,219,193	754,925	458,818	228,473	687,291
51,025,666	2,151,405	2,323,124	171,719	39,869,319	3,353,829	2,376,332	977,947	171,417	144,446	315,863
52,980,951	2,394,503	2,580,982	186,479	40,236,379	3,298,116	2,630,624	667,492	1,799,463	47,589	1,847,052
54,571,591	2,414,700	2,698,600	283,900	40,777,479	3,550,800	2,704,300	846,000	1,428,000	169,000	1,597,000
—	20,406,047	26,766,130	6,360,083	—	(h)	(h)	(h)	43,191,843	5,664,960	48,856,803

(f) Includes the following amounts for advances, and repayments of advances, of interest :-

	1881-82.	1882-83.	1883-84.	1884-85.	1885-86.	1886-87.	1887-88.	1888-89.	1889-90.	1890-91.	1891-92.	1892-93.	1893-94. Revised.
Advances -	Rx. 5,188	Rx. 16,807	Rx. 34,154	Rx. 45,239	Rx. —	Rx. —	Rx. —	Rx. —	Rx. —	Rx. —	Rx. —	Rx. —	Rx. —
Repayments	2,762	4,524	3,240	618	119	1,616	24,764	42,768	49,103	31,480	32,994	17,883	33,700
Net -	2,426	12,283	30,905	44,621	-119	-1,616	-24,764	-42,768	-49,103	-31,480	-32,994	-17,883	-33,700

(g) This sum is thus arrived at:-

Capital of East Indian Railway at time of purchase	£ 26,200,000
" 25 per cent. premium thereon	6,550,000
Debentures and debenture stock	4,450,000
Outlay subsequent to purchase	Rx. 154,248
Outlay of the Dildarnagar-Ghazipur, Nalhati, and Patna-Gya Railways	425,318
Total	Rx. 37,779,596

* Of these amounts, 27,623,386 $\frac{1}{2}$ will be redeemed by an annuity terminable in 1953, which annuity is entered in the column "Interest and Annuity."

(h) Figures are not available, and are included under guaranteed railways.

CHAPTER II.

WORKS COMPLETED AND IN PROGRESS.

EAST INDIAN RAILWAY (STANDARD GAUGE).

Jherriah Extension.—The Jherriah extension of the Barákar branch of the East Indian Railway, originally estimated to cost about Rs. 36,79,206 for a distance of 39 miles, has been practically completed during the past year, the rails having been laid into Kátrás, and only a little ballasting remaining to be done. A possible saving of Rs. 2,00,000 having been reported, it was decided to run a branch from this extension to further open up the Jherriah coal-fields, and sanction has been given to an estimate of Rs. 3,63,839. This branch, known as the Damoodur branch, takes off at the 28th mile from Barákar, and will be about 10 miles in length.

Toposi Extensions.—During the past year the section from Toposi through Nandi to Khorabad has been completed, and on the Nandi-Panuria section four miles of rails have been laid; the Jamgram half-section from Salanpur on the East Indian Railway to Shamdihi is also ready for plate-laying; the total length of the extensions is $28\frac{1}{4}$ miles, and their cost aggregates Rs. 10,59,372.

Inspection pits for the vacuum-brake gear have been built at Howrah, Allahabad, and Delhi, and gas-works for the supply of Pintsch's gas set up at Howrah and Allahabad. Mokameh Ghát yard has been remodelled on account of the transfer of the waggon ferry of the Bengal and North-Western Railway from Dígha, and a loop to the main line for down goods trains has been laid in, but not yet opened.

The principal works in progress are the relaying of the Gya branch with Denham-Olphert's sleepers and the junction arrangements at Ásansol station and at Delhi station.

EASTERN BENGAL (STATE) RAILWAY (STANDARD, METRE, AND SPECIAL GAUGES).

2. More than half of the stone required for the purpose of protecting the river bank at Raita was pitched during the year, and the rest will be delivered early in 1894-95.

A length of seven miles was relaid with 50-lb. steel rails on the Northern section, the total length relaid up to the 31st March 1894 being 113 miles. About eight miles of road was relaid with 73-lb. steel rails on the Eastern section, where the length relaid up to the end of the year was 16 miles.

The metre gauge line from Bársoi to Kissengunge was opened for public traffic on 10th December 1893, and the double standard gauge line between Ballygunge and Dock junction, referred to in the last report, in November 1893. The bridges on the Northern section, which were damaged or washed away by the floods of 1892, have also been replaced.

Fencing the line between Dámukdia and Raita has been finished; additional sidings provided at Naiháti, Kánkinára, Belliaghata, Domár, Kaunia, and Sealdah, and further additions and improvements made in the yards at Sára, Dinagepore, Bársoi, Katihár, and Jamalganj. During the year over-bridges for foot passengers were constructed at Khardaha, Tittaghur, Ichhápur, Kánkinára, Kánchrapára, Madanpur, Chogdah, Bogoola, and Kissengunge Bazar, and those at Ballygunge, Tolley's Nullah, Majherat, Chooadangah, Álamdānga, and Porádaha commenced. At Narculdanga a petroleum depôt for 30,000 cases was constructed, together with the necessary shed for soldering and an office. Goods shed was erected at Madanpur, Kasba, and Sonaili.

At Bhairámára a station building, goods shed, and pucca platform have been built, and at Bhowanipore a new station building.

Sidings to Messrs. Ralli Brothers' jute godowns were constructed at Jalpaiguri, and those at Saidpur extended. A siding was also laid at the coal depôt of Messrs. Mackinnon, Mackenzie & Co. at Brace-Bridge Hall.

BENGAL CENTRAL RAILWAY (STANDARD GAUGE).

3. The re-sleeping of the line is in progress; all decayed creosoted pine sleepers being replaced by sál wood sleepers. A carriage and waggon-lifting siding at Bongong and a goods shed and approach road at Nábháran (late Jádubpore-Nabháran) have been constructed.

CALCUTTA PORT COMMISSIONERS' RAILWAY (STANDARD GAUGE).

4. A passing station was constructed during the year 1893 at Prinsep's Ghát at a cost of Rs. 1,190.

ODDH AND ROHILKHAND (STATE) RAILWAY (STANDARD GAUGE).

5. During the year 55·07 miles of road have been relaid with 75-lb. steel rails, the total length of line thus laid being now 364·29 miles, including the Lucknow-Rae Bareli branch. The length laid with 60-lb. steel rails is 174·64 miles, the remaining portion of the line, viz. 202·18 miles, being laid with 60-lb. iron rails. 3·92 miles of steel sleepers were also laid in the open line during the year.

The construction of a crossing station has been commenced between Lucknow and Harauni, on the Cawnpore branch, to shorten the run of 14 miles.

Lucknow-Rae Bareli Section.—The Lucknow-Rae Bareli section of the Lucknow-Rae Bareli-Benares Railway, 48½ miles, was completed and opened for goods traffic on the 16th and for passenger traffic on the 26th October 1893.

Bareilly-Rámpur-Moradabad Section.—The Bareilly-Rámpur-Moradabad section, 56 miles, has been nearly completed, and will probably be opened for traffic during May 1894.

Of the large bridges on this section, the girder erection at the Baigul nullah (seven spans of 100 feet) and at the Bhakra nullah (six spans of 100 feet) has been practically completed, as also at the Kosi River (10 spans of 100 feet). The Ráunganga bridge (10 spans of 200 feet) will be ready in June 1894.

The construction of this section has been delayed by the heavy rainfall during 1893. An unprecedentedly high flood occurred in October 1893, when preparations for the working season were well advanced, and washed away the temporary bridges, causing considerable damage and greatly retarding the progress of work.

NORTH WESTERN (STATE) RAILWAY.—GRADIENT IMPROVEMENT WORKS.

6. *Improvement Works between Jhelum and Rawalpindi.*—The new alignment on improved grades between Mandra station and mile 980, 4¾ miles in length, was opened to traffic on the 29th November 1893.

There now remain only two very important sections of the new alignments to complete, viz. :—

Domeli to Soháwa, 11 miles.

Mile 980 to Ráwalpindi, 19 miles.

Domeli to Soháwa.—Three miles of new line are complete, and have been already inspected with a view to immediate opening to traffic, a temporary switchback being brought into use near Tarki to connect the old and new lines. Six miles are still under construction, and should be completed during the year 1894-95. The foundations of the Bakralla bridge have been completed, and all piers are up to springing. All earth-work is well advanced and all culverts completed.

Siala Project, mile 980, to Ráwalpindi.—The works have advanced well during the year, and permanent-way has been laid throughout, except on a length of about 1¼ miles near the Sohan bridge. The Ling bridge masonry is complete and girder work in progress. On the Sohan bridge masonry is three-fourths done, and only two foundations still remain to be got in; and the Kurung and Leh bridges are complete. The Ling tunnel will also be completed at an early date.

NORTH-WESTERN (STATE) RAILWAY SYSTEM (STANDARD GAUGE).

7. *Main Line*.—The work of strengthening weak girder bridges on the main line has made steady progress. The Ravi bridge at Shahdara has been completed and was opened to traffic on the 15th July 1893, the three additional spans of waterway being filled up and the girders removed. The conversion of the old railway bridge for the passage of cart and passenger traffic is nearly completed. The renewal of the girders of the Jhelum bridge also went on steadily, and the rebuilding of the cracked piers will, it is expected, be completed at an early date, with the exception of two, which will be taken in hand after the floods in October next. A temporary pile bridge over the river Haroo was constructed in place of the old permanent bridge washed away by the floods of July 1893, and the construction of the new permanent bridge is in hand. Fourteen small bridges were either altered or strengthened during the year.

The renewing of certain Warren girder bridges on the Kurrachee district is also in hand, and the altering and strengthening of the bridge over the Bari Doab canal, near Amritsar, nearly completed.

The new engine-shed and locomotive menials' quarters at Kurrachee cantonment were completed, and an extra cross-over road at Kurrachee city provided. A dead-end siding and a new 25-ton weigh-bridge were erected and five waggon turntables renewed at Kíámári. The new reservoir and piping at Sukkur and the new permanent station buildings at Temple-Dera and Jhatpat were completed.

Loop sidings were provided at Lándhi and Pattoki, and the river bank siding at Adamwáhan bridge was relaid. A new station was built at East Bank Beas, and new goods sidings were laid at Rámpura-Phúl, Bárnála, Alál, Dhablán, and Chhintanwala.

The following flag stations were sanctioned to be converted into crossing stations, and the greater portion of the work was completed by the end of March 1894:—

Goráya -	-	Flag station between Phillour and Phagwárah.
Pattoki -	-	Flag station between Wán Rádharám and Chánga Mánga.
Kallowal -	-	Ballast siding between Dina and Jhelum.

Ugoke and Adamwáhan bridge were opened as regular roadside stations, and Tando Thoro and Khesano on the Hyderabad-Umarkot Railway as flag stations.

Interlocking arrangements of points and signals were put up at 13 stations, and patent connections for gates at levels crossings were supplied at 17 stations.

Other works in progress are—

Altering and extending locomotive yard, Lahore; repairs and additions to training works of the Chenab bridge at Wazirabad; alterations to the east end of Amritsar station yard; over-bridge at Amritsar.

Troop Traffic Works.—Several works in connection with troop traffic were undertaken during the year. At Ráwalpindi the subway and the foot-bridge in connection with the fort sidings and the combined commissariat and transport sidings and platform were completed. Special sidings for detraining and entraining troops were provided at Dádú and Umballa and troop platforms and sidings at Kurrachee. The re-arrangement of troop sidings at Reti is in hand, and also the provision of extra siding accommodation at Sher Shah.

Sind-Sagar and Khushalgar Branches.—The Sind-Sagar section, including the Bhera branch, was damaged by heavy floods in July 1893, and several diversions had to be put in from time to time to restore through communication.

Sind-Pishin Section.—The principal works completed during the year were repairing and providing iron roofing to certain buildings between Yarú Karez and Kila Abdulla and at Khost and Násák, and the construction of nine minor bridges on the the Sharigh district rendered necessary by the flood of 1892.

Work near Mudgorge has been confined to training the river so as to minimise erosion of the toes of the slips and to improving the drainage of the threatened localities.

The curves at Puddle Hollow near Mudgorge have been improved, and the re-alignment above Dalújal, mile 489, was completed and opened on the 1st September 1893.

The chief works in progress are the lining of the Khojak tunnel and the special repairs and completion of formation from Kila Abdulla to Shelabagh.

MUSHKAF-BOLAN (STATE) RAILWAY (STANDARD GAUGE).

8. The total length of the Mushkaf-Bolán line from the centre of the Bolán junction station (mile 449½ from Kurrachee) to the centre of the Quetta station (mile 536 from Kurrachee) will be 86½ miles, the centre of the Bolán junction station being 2 miles from the centre of the Sibi station. Of this length of 86½ miles, the first 4½ miles out of Sibi and the last 24 miles into Quetta are parts of the original Bolán line, and will need but little alteration, the actual length of line under construction being 59 miles.

The revised estimates referred to in last year's administration report, providing for building all the tunnels and bridges for a double track of railway, were submitted to Government in April 1893, and sanctioned by the Secretary of State in December 1893.

As usual, the temporary line from Rindli to Mach was closed during the floods, June to September, and numerous small floods during the winter caused considerable damage in the Kundilání gorge and at Bibinani. The permanent-way from below Lalaj to Mach is being lifted and laid for temporary purposes close to the line under construction, and when this is completed the only length of temporary line liable to damage from floods will be confined to the Kundilání gorge and its neighbourhood. On the temporary alignment round the east side of the Bohr hill the line suffered no damage whatever, and from Mach to Hirók trains have been working without interruption throughout the year. There is still a break in through communication from Sibi to Quetta *via* this temporary Bolán line of about three miles between Hirók and Dózán.

A temporary line has also been laid up the Mushkaf Valley from Nari Bank station (5 miles west from Sibi) to Ocepur, mile 468, and will shortly be extended to the south end of Panir tunnel, mile 475, to assist in ensuring its early completion.

The first division extends from Sibi to 474½ miles, and is 25 miles long, of which about 20 miles is now under construction. Construction work was commenced in September 1893, and the earth-work is almost completed. About half the masonry of the minor bridges is completed, and two of the major bridges (three spans of 150-foot girders with four arches, 30-foot span, and three spans of 150-foot girders and two spans of 60 foot girders) are ready for the girders. The top headings of the eight tunnels are through, and enlarging is in active progress, while in six arching has been commenced. With one exception, the tunnels are in treacherous ground, requiring very extensive timbering. English miners are employed to supervise the timbering.

The ruling gradient on this division is 1 in 55 compensated for curvature, the sharpest curve being 1,433 feet radius. The stations and offices at Mushkaf, Ocepur, and Panir are complete.

On the second division, mile 474½ to 486½, progress has been continuous and satisfactory. The first four miles of this division are exceptionally heavy as regards earth-work and tunnelling.

The headings of No. 9 tunnel through the Panir hill met in August 1893, the average rate of progress working out to 13 lineal feet per day. Since then the work of enlarging and lining has been pushed forward, so that this tunnel is now about one-third lined, and should be completed about March 1895.

Tunnels Nos. 10 and 11 are completed, with the exception of their portals. It has recently been decided to substitute a tunnel (No. 11-A) 160 feet long for an open cutting some 90 feet deep through a spur at the north end of cutting No. 98, as the rock shows signs of clay beds; the bottom heading has been made, and enlarging is now at hand. Tunnel No. 12 is in conglomerate throughout; the top headings met in September, enlarging is now in active progress, and lining just commenced.

The masonry of both the major and mining bridges is in hand, and also extensive training works. Many of the latter are of masonry walling throughout. The *talus* across which the line is located is very steep in places, and the floods move enormous masses of gravel and boulders which, unless properly regulated, will overwhelm the works. The station buildings, platforms, and staff quarters at Pishi and Chidderzie stations have been completed. The water-supply for these stations is brought by gravity through wrought-iron pipes from springs 1 and 1½ miles distant respectively,

and at both places the supply is now abundant and of good quality, and as a temporary arrangement the water is distributed through pipes for long distances along the line.

As far as the Ab-i-Gum station the ruling gradient is 1 in 55 compensated, and from thence to Mach (mile 486½ to 495), constituting the third division, 1 in 33 compensated. The earth-work is practically completed, and some of the bridges are in hand. Water for these works has been led in pipes from Mach.

The fourth division extends from Mach to Hirók (miles 495 to 503), and is practically completed, with the exception of the high embankment at the north end of the Hannar bridge (No. 177). This bridge, which is three spans of 150-foot and one span of 60-foot girders, with the rails about 65 feet above the river bed, is almost ready for the girders, and its very extensive training walls are also practically finished. The other bridges are almost ready for the girders. There is one tunnel (No. 13) 350 feet long through a conglomerate cliff near Siri Bolán, and this is now completely finished. The ruling gradient on this division is 1 in 25 and the sharpest radius 1,146 feet (5° curvature.)

Mach station on the 496th mile is the engine changing station. Station buildings are all approaching completion. A tank capable of holding 120,000 gallons of water has been built, and the water is led to it by gravity in wrought-iron pipes from springs opposite Old Mach, about 2½ miles up the valley, and a pump and pumping engine are provided just below the tank for pumping water from the Bolán river should the gravity supply be interrupted.

The fifth division extends from Hirók to Kolpur (mile 503 to 512) through the narrowest and most difficult part of the Bolán pass. The line is very tortuous, and crosses the Bolán ravine nine times in 4 miles. The earth-work, which is very heavy, is practically finished, and the rails are laid temporarily on the new formation for about 3 miles. Of the four tunnels on this length, No. 14 is 600 feet long, No. 15 is 450 feet long, No. 16 is 600 feet; and the "cut and cover" (No. 17) at the summit of the pass is 300 feet long. The lining in No. 14 is now well in hand, and this tunnel should be completed soon, Nos. 15 and 16 have the arching completed; but there is still some under-pinning and cleaning out to be done. The minor bridges are all completed, and the major bridges, which are comparatively numerous, very soon will be. The Hirók station building and platform (mile 503) are completed; those at Dózán (mile 506) are not yet commenced. The ruling gradient between Hirók and Kolpur is 1 in 25, and there is one curve of 900 feet radius (6° 25' of curvature), the others being 1,000 feet radii or flatter. The water-supply is obtained from a spring about 2 miles above Dózán station, and is distributed through wrought-iron pipes by gravity to Hirók station and to a pumping station on the 508th mile (about half way between Dózán and Kolpur), whence it is pumped to a tank above the Kolpur station capable of holding 100,000 gallons.

From Kolpur to Quetta, a distance of about 25 miles, the line is in working order, the ruling gradient being 1 in 100 compensated. There is no water-supply at the stations on this length.

The girders for the new railway bridges have the roadway on the top booms with corrugated plate decking for supporting the ballast and permanent way. From Sibi to Áb-i-Gum the existing permanent-way materials will be used. The rails, which are steel, weigh 75 lbs. to the yard, and are double-headed for Denham-Olphert's cast-iron plates and flat-footed for the steel-trough sleepers. From Ab-i-Gum to Kolpur (miles 488 to 511) the rails will be flat-footed steel, weighing 100 lbs. to the yard, laid on steel trough sleepers.

MARI-ATTOCK RAILWAY (STANDARD GAUGE).

9. The length of this railway from Roumia to Basál (New Pind Sultani) is 25 miles and from Langar to the 74th mile, 33 miles.

The length between Basál (New Pind Sultani) and Langar, 16 miles, is a part of the open mileage of the Khusálgarh branch of the North-Western (state) railway.

In addition to the lengths referred to above, there is the length from the 74th to the 96th mile on which work has not yet been started.

Little general progress has been made with construction works during the year, owing to the limited funds available.

Campbellpore Division.—On this division, which extends from Roumia to Basál (New Pind Sultani), 25 miles, the headings of six tunnels, aggregating 6,800 lineal feet, have been completed, and a start made with the masonry faces of three of these tunnels.

The Hurroo bridge, three spans of 150 feet (103 feet in height), has been quite completed, and also the piers of the Nandna bridge, four spans of 150 feet (124 feet in height), and $1\frac{1}{2}$ spans of girders erected. Masonry on all other major bridges between Roumia and Basál is practically complete. The girders for these bridges have been received.

Culverts are all practically complete; also the bulk of the earth-work, excepting some seven or eight deep cuttings, on which a little progress has been made. Station buildings have not yet been started.

Langar Division.—All work on this division, which extends from Langar, mile 41 to mile 74, has been in abeyance during the year; the bulk of the lighter earth-work was done in 1892–93, the heavy work being still untouched. Three rest houses have been completed, and the heading of the Chab tunnel, 1,000 feet long, has been driven. No progress has been made with any of the bridges.

INDIAN MIDLAND RAILWAY (STANDARD GAUGE).

10. The work of doubling the line from Bina station to chain 1572·50, being a continuation of the Bina-Guna Railway, is progressing satisfactorily.

The locomotive shops at Jhánsi are completed, the founding of the machines only remaining to be done; the masonry storage reservoir at this station is also finished, and has been filled with water; but the erection of the steam pump and other minor works have to be carried out to complete the scheme.

The cantilever footpathway over the Jumna bridge at Kálpi is well in hand, and will probably be ready for opening about the end of June.

The re-arrangement of the locomotive yard at Mánikpur, sanctioned during the year, will be finished and made over to the Locomotive Department early in 1894–95.

BHOPAL-ITÁRSI RAILWAY (STANDARD GAUGE).

11. The new locomotive yards at Itársi and Barkhera are practically completed, and the junction arrangements to admit the Bhopal-Ujjain Railway to the Bhopal yard have just been started.

The work of fencing the railway and providing huts and gates at the level-crossings, sanctioned in November 1892, is progressing satisfactorily, and additional quarters for the staff at Bhopal, Dip, Barkhera, Budni, and Hoshangabad have been arranged for.

BHOPAL-UJJAIN RAILWAY (STANDARD GAUGE).

12. The length of the railway from Bhopal to Ujjain will be 114 miles.

Bhopal Section, Miles 0–32.—Earth-work on this section was started in June 1893, and is now about half finished, and permanent-way material is beginning to arrive.

From Bhopal to mile 16 but little progress has been made with masonry, but quarries have been opened and nearly all the stone required has been carted out to the bridge sites. On the remainder of the section the progress has been better, and some of the bridges have been completed, stone being obtained from an old quarry near Sehore.

Gwalior section, Miles 32–114.—Up to mile 46 the earth-work of this section is practically complete, and on to mile 68 good progress has been made. Between mile 68 and 104 the location of the line has been changed, and no start could be made till after the rains. Miles 104 to 112 were also left till this re-alignment was settled, and the last two miles of the section are in abeyance till the junction arrangements at Ujjain have been fully considered.

Fair progress has been made on the Parbutti bridge; the foundations of the Niwaj and two other major bridges have been got in, and the work on three piers of the Barikali-Sind bridge is well advanced. A large quantity of stone has been quarried and carted out to the smaller bridge sites.

BÍNA-GUNA RAILWAY (STANDARD GAUGE).

13. The formation of this railway, $73\frac{1}{2}$ miles in length, has been practically completed during the present working season, and but little ballast remains to be supplied. All bridges have been finished, with the exception of the Betwa, Sindh, and Or bridges, which are waiting for their girders; the Or girders are under supply, and the bridge will be completed at an early date; but the girders for the Betwa and Sindh bridges will not arrive in time for erection during the present season. All buildings are well advanced with the exception of the booking offices, which are rather backward. Permanent-way is being delivered, and it is hoped that the rails will reach Guna before the end of June 1894.

BENGAL-NÁGPUR RAILWAY (STANDARD GAUGE).

14. Among works in progress may be mentioned the construction of combined institute and tank houses at Biláspur and Chakardharpore stations.

At Sambalpur a bridge of boats has been constructed across the Mahanuddy and opened for traffic. It has replaced the ferry which previously existed, and will considerably increase the traffic from the south bank of the river into Sambalpur station.

The five crossing stations of Jaraikelga, Kuluna, Nimdih, Kántadih, and Kustaur, which were completed last year, were this year opened for traffic, and a new station at Radhanágar on the Sanctoria colliery branch to deal with the increasing coal traffic is being built.

GREAT INDIAN PENINSULA RAILWAY SYSTEM (STANDARD GAUGE).

15. The new interlocking and signalling arrangements at Victoria terminus are nearly complete, and the additional sidings, platforms, and waiting rooms have been finished. A new station to the north of Hancock bridge at Mazgaon, between Masjid and Byculla stations, was sanctioned during the year, and the necessary works are in progress. The quadrupling of three-fourths of a mile between Nesbit Lane and the north end of the new Byculla station has been completed. The new station buildings at Chinckpokli and Currey Road are still under construction, and work on a new station at Kurla, to the north of the present station, has been started.

The cylinders of the bridge over the Mumbra creek at mile 25.10 are being cased with others of cast iron of 3 feet greater diameter, the space between being filled in with cement concrete.

The re-construction of the Kareli and Singla bridges has been started, the approach roads of the diversions are practically finished, and the temporary bridges well in hand.

The work of strengthening the old 30-foot girder bridges was taken in hand, and is now in full swing, 60 out of the 430 girders of this description having already been strengthened and replaced.

The work of strengthening the road on the south-east line between Poona and Raichúr by the addition of an eighth sleeper per 24-foot rail was completed during the year, and good progress was made in the work of replacing the 69-lb. rails by 82-lb. steel rails.

The introduction of the new system of signalling arrangements throughout the system was proceeded with. The new system is already in operation as far north as Harda; on the south-east line, up to, and not including, Sholápur; and as far as Shegaon on the Nágpur branch.

On the Dhond-Manmád Railway the principal work in progress is the erection of fencing. A length of 90 miles has been completed from Dhond.

On the Wardha Coal Railway the renewal of sleepers was proceeded with at the rate agreed upon, viz., 6,294 per year.

BOMBAY, BARODA AND CENTRAL INDIA RAILWAY (STANDARD GAUGE).

16. The railway company are building a new terminal station at Colába with a re-arrangement of the station yard. Work was also commenced on a masonry over-bridge to carry the Falkland road over the rails north of Grant Road station.

A siding is being constructed from the station yard to a ginning factory at Anklesvar, and similar sidings to cotton presses have been put in at Pálej and Miyágám. Crossing stations have been provided at Vedcha, Kósumbá, Lákodrá, Bájuva, Návli, and Boriávi. The work of doubling the line between Baroda and Itola was commenced during the year, and additional siding accommodation is being provided at Anand junction. The works at Viramgám to admit the metre gauge line from Mehsána have been completed.

The work of strengthening two piers of the south Vaiturni bridge and one pier of the north Vaiturni bridge is in progress. The span close to the abutment of the Narbada bridge on the south-east side has been strengthened. A pile of the Par bridge and the north abutments of the Auranga and Caveri bridges were damaged by the monsoon of 1892; the former has been replaced and the latter repaired; and a girder span of 60 feet has been added to the Volkla bridge on the Pátri branch.

On the Pátri branch several new sidings are being put in at Khárághoda to allow the Salt Department to open up new salt-pans in order to meet the demand caused by the partial failure of Sámbar salt.

GODHRA-RUTLAM RAILWAY (STANDARD GAUGE).

17. The total length from Godhra to Rutlam will be $115\frac{1}{2}$ miles.

On the open portion of the line from Godhra to Limkhérá, 25 miles, several works which were not completed at the date of opening, such as gate lodges, palisade fencing at stations, the goods platform at Limkhérá, &c., were in progress during the year, and a further section of this railway, from Limkhérá to Dóhad, 20 miles, were completed and opened for traffic on the 7th March 1894.

On the remaining portion of the Dóhad division work is well forward, and rails have been laid on considerable lengths of the section. At the 47th mile the Kan bridge, 4 spans of 60-foot girders, has been completed, and it is expected that the other large bridges on this section will be completed and rail head run up to the Anas bridge on April 1894. At the Anas bridge good progress has been made.

On the Rutlam division also the work has made fair progress. At the Panchpiplia tunnel the lining of the inside walls is nearly completed, and the arching is finished for a length of over 80 feet. Dressing to full section in the unlined portion is well in hand. Good progress has been made with the bridge-work. At the Mai bridge girder erection had been completed on six out of the eight spans.

The principal obstacles to opening are the heavy cuttings at miles 10 and 34. Good progress has been made with the former cutting, but at the latter labour had very much fallen off towards the end of the year.

It is expected that the Godhra-Rutlam Railway will be open throughout by the end of June 1894.

THE GAERWAR'S PETLAD RAILWAY (STANDARD GAUGE).

18. No new works of any importance have been carried out on this line.

MADRAS RAILWAY (STANDARD GAUGE).

19. In the course of the year under review the bridge at mile 395, south-west line, has been strengthened by the insertion of additional piers of screw piles, and the strengthening of the weak girders of the Booga bridge at mile 162 on the north-west line completed.

Most of the works in connection with the junction of the Nílgiiri Railway at Méttupálayam have been completed. The works of the junction with the Kólar Goldfields Railway at Bowringpet are in progress, as also the alterations and improvements at the Bangalore city station. Interlocking arrangements have been completed at Púdi station, and estimates sanctioned for similar arrangements at Nagari, Tiruttani, Mámandúru, and Puttúr stations. Distant-signals have been provided at every station on the line.

The up line between Madras and Arkónam has been re-laid with 30-foot steel rails.

KOLAR GOLDFIELDS RAILWAY (STANDARD GAUGE).

20. This line from Bowringpet (late Kólar road) station on the Madras Railway to Mysore mines station, a length of 10 miles, was completed and is in readiness for opening, and will be worked shortly for goods and passenger traffic by the Madras Railway Company.

THE NIZAM'S GUARANTEED STATE RAILWAY (STANDARD GAUGE).

21. The construction of the new locomotive workshops at Lalagooda is still in progress, and it is expected that the shops will be finally completed by the end of the year 1893.

EAST COAST (STATE) RAILWAY (STANDARD GAUGE).

22. The sanctioned mileage of this railway from the Kistna canal terminus to Náráj near Cuttack, including the Cocanada and Vizagapatam branches, is $521\frac{1}{2}$ miles. Of this length, 91 miles from Bezwada to the right bank of the Godávari river opposite Rajahmundry were opened for traffic in 1892-93. A further length of $174\frac{1}{2}$ miles from the left bank of the Godávari near Rajahmundry to Vizianagram, including the Cocanada and Vizagapatam branches, was opened for public traffic on the 21st August 1893, and on the 1st January 1894, the section, 4 miles in length, from the Kistna canal terminus to a temporary transshipping station at Bezwada, including the Kistna bridge, was completed for the passage of metre gauge trains.

Almost all works which remained unfinished on the open section have been completed. The only important work still in progress is the Vizagapatam swamp line, which, it is expected, will be finished by the end of May 1894.

Good progress has been made with the works on the $234\frac{1}{2}$ miles beyond Vizianagram the remaining $17\frac{1}{2}$ miles being in abeyance pending the settlement of the question of bridging the Mahanuddy without evading Cuttack. Fifty miles have been platelaid, and 150 miles of the remainder will, it is expected, be ready for opening in 1894-95.

The only important works in hand on the unopened sections are the bridges over the Langulia, 6 spans of 150 feet, girders under erection, masonry practically complete; Vamsadhara, 9 spans of 70 feet, masonry complete, girders being landed; and the Rushikulya bridge, 10 spans of 150 feet, masonry finished, girders in part erected and in part under indent. The embankments and rock cuttings at the southern end of the Chilka lake are well in hand, and several threatened slips have, it is hoped, been mastered.

ASSAM-BENGAL RAILWAY (METRE GAUGE).

23. This line, which is $740\frac{1}{4}$ miles in length, is divided into three construction sections, on which progress has been as follows:—

Section I.—From Chittagong to Badarpur, with branches to Laksam and Silchar, $302\frac{1}{4}$ miles—seven divisions.

All re-alignments have been finished and land plans completed. There has been, however, some delay in getting possession of land which has been acquired in five only out of the seven divisions.

Earth-work is in progress throughout; on the Laksam branch it is practically completed, and very nearly so in two other divisions, though delay and damage has recently been caused by unseasonable storms, especially to some large banks crossing the heavy swamps on the lower part of the section.

Minor bridges have been started, and also some of the major bridges. Brick-burning has also been carried on. Plate-laying has been started from Chittagong and Chandpur, and sleepers are being delivered.

At Chittagong the works required for the landing of stores and the erection of rolling-stock have been pushed on; temporary shops have been erected pending the arrival of the ironwork for the permanent ones, and a commencement also has been made in building staff quarters.

Through Telegraph communication has been established on this section.

Section II.—Badarpur to Lumding, 112 miles.—This is the hill section, and the work of the year has been mainly confined to re-aligning, starting the cart-road, building quarters, &c.

The erection of a temporary telegraph line has been started, but the progress has been small, only about 25 miles out of a length of 110 miles having been carried out during the working season.

Section III.—Gauháti to Lumding, and northwards to the terminus at Makum, 326 miles.—The work between Gauháti and Lumding is being continued, and progress has been made with the earth-work, though great difficulties has been experienced in

getting labour. Platelaying has been started from Gauháti, and work has also been started on major and minor bridges, a number of culverts being finished.

Beyond Lunding the work has consisted only of re-survey and re-alignment.

DIBRU-SADIYA RAILWAY (METRE GAUGE).

24. During the year three miles of line were relaid with 50-lb. rails. The Dinjan Nullah bridge was completed, two 20-foot spans of iron girders being substituted for the four 10-foot timber spans, and a permanent engine-shed was under construction at the workshops.

The main line was extended from Steamer Ghât along the river bank, about $1\frac{1}{2}$ miles, to serve the deep-water channel of the Brahmaputra river.

BENGAL AND NORTH-WESTERN RAILWAY, TIRHOOT SECTION (METRE GAUGE).

25. *Tirhoot Section.*—The works in connection with the transshipment yard, Mokameh Ghât, were completed during the year. A new crossing station has been constructed at Tarki, $6\frac{1}{2}$ miles from Mozufferpore on the Sonapore branch, to take the place of Kurhanni, converted into a flag station, the maximum distance between crossing stations on this section being reduced thereby from $10\frac{1}{2}$ to $7\frac{1}{2}$ miles. Land has been acquired for converting Laheria Sarái into a crossing station, and work on it has been started.

COOCH BEHAR RAILWAY (2 ft. 6 in. GAUGE).

26. The construction of the Cooch Behar Railway, $22\frac{1}{4}$ miles in length, from Gitaldaha to the right bank of the Torsa river, $1\frac{7}{8}$ miles short of Cooch Behar city, was practically finished during the year under reference. In the beginning of the year the banks, which had been considerably damaged by floods in 1892, were repaired, and the bridges and culverts, the construction of which had been delayed for want of bricks, all finished. The Chur line at Mogul Hat, the Ghât line at Gitaldaha, the station buildings, signals, and quarters for the staff were also completed.

BENGAL-DOOARS RAILWAY (METRE GAUGE).

27. The Bengal Dooars Railway, noted on in the two previous Administration reports, consists of a main line starting from the east bank of the river Teesta opposite Jalpaiguri, and running to Dam Dim, a distance of 31 miles, and of a short branch, $5\frac{1}{2}$ miles in length, from Lataguri to Ramshai.

The length from the Teesta to Mal Bazar, $26\frac{3}{4}$ miles, was opened for passenger traffic on the 1st November 1893, the Latiguri-Ramshai branch having been opened on the 11th June for goods traffic only. The unfinished length from Mal Bazar to Dam Dim has been platelayed, diversions having been laid round the sites of the uncompleted bridges, ballasting is three-fourths done, and all station buildings are practically completed, except at Dam Dim.

ROHILKUND AND KUMAON RAILWAY, LUCKNOW BAREILLY SECTION (METRE GAUGE).

28. The Sonaripur extension of the Dudwa branch, $4\frac{1}{4}$ miles in length, has been laid, and was ready for goods and passenger traffic before the close of the year; also the Bareilly grain siding. Kuriya flag station is being converted into a third-class station. The Sardá pontoon bridge was completed and erected in December 1893.

RAJPUTANA-MALWA RAILWAY (METRE GAUGE).

29. Considerable renewals of rails and sleepers were carried out during the year on different portions of the line, and the work of re-aligning the Malwa section between Fatehabad and Indore is still in progress.

A cotton-press siding was put in at Hindaun Road, and additional accommodation was given at Agra Fort station for standard gauge working; additional sidings at Kásanj were completed, and a siding has been run out to a cotton press erected at

Jaora. At Delhi the additional works at the passenger station, necessitated by the entry of the Dehli-Umballa-Kalka Railway, have been finally completed by the opening of the fourth coaching line.

The new water-supply arrangements at Dángarwa and Siddhpur were completed; also a tank to hold 40,000 gallons of water at Sendra. At Sábarmati a low-level tank to hold 30,000 gallons of water is being constructed; a new tank is also being provided at Mori, and alterations and improvements have been made in the watering arrangements at Gursahaiganj, Jasodá, Araul, Bilhaur, Barrájpur, and Mandhana.

Sanction to the construction of two new bridges each of four spans of 22-foot girders, at miles $4\frac{1}{2}$ and $1\frac{1}{2}$, between Játoli and Khalílpur stations, where the line was breached in July 1893, was given in February 1894. The work is in hand, and will be completed before the next monsoon. The rebuilding of the bridge over the Pushnavati river, with four spans of 40-foot girders at mile 528, has been completed, the bridge being reopened for traffic on the 1st June 1893.

PÁLANPUR-DEESA RAILWAY (METRE GAUGE).

30. This line, $17\frac{1}{4}$ miles, was completed during the year and opened for public traffic on the 25th November 1893.

THE GAĒKWAR'S MEHSÁNA RAILWAY (METRE GAUGE).

31. At Pátan an additional siding has been laid, and the length of the original goods shed and goods platform doubled. The Motipura bridge on the Kherálu branch was again damaged by rain on the 22nd June 1893, and the work of repairing the damage and adding another span of 60-foot girders to the south end of the bridge has been commenced.

OODEYPORE-CHITOR RAILWAY (METRE GAUGE).

32. This railway, $60\frac{1}{2}$ miles in length, from Chítorgarh station on the Rajputana-Malwa Railway to Debari, near Oodeypore, has recently been sanctioned. The line is estimated to cost Rs. 12,63,719, exclusive of the provision for workshops and rolling-stock, giving a mileage rate of Rs. 20,888.

JODHPORE BICKANEER RAILWAY (METRE GAUGE).

33. All the works stated to be in progress in the last report have been completed, with the exception of the well at Ren, which has been abandoned.

BHÁVNAGAR-GONDAL-JUNÁGARH-PORBANDAR RAILWAY (METRE GAUGE).

34. The work of renewing the old sleepers in the road was proceeded with during the year, and about nine lakhs of cubic feet of stone ballast was spread on different parts of the line. At Dhasa the new permanent station was completed and opened for traffic.

JETALSAR-RÁJKOT RAILWAY (METRE GAUGE).

35. This line, $46\frac{1}{4}$ miles from Jetalsar to Rájkot, was completed during the year and opened for traffic on the 12th April 1893. The station at Rajkotpura was also completed and opened. At present the line is separated from the Morvi, 2 ft. 6 in. gauge, railway at Rájkot, by the Agi river. A bridge across the river is under construction, and when completed will carry the metre gauge road to the other side, to form a junction with the 2 ft. 6 in. gauge line. The work is expected to be completed by the end of June 1894, adding about half a mile to the length of the line.

SOUTHERN MAHRATTA RAILWAY SYSTEM (METRE GAUGE).

36. The unopen portions of the railway between Bangalore and Guntakal have been completed and opened, and handed over to the Southern Mahratta Railway Company to work. The line from Guntakal to the Mysore frontier ($119\frac{1}{2}$ miles) was constructed

by the agency of the South Indian Railway, and the portion within Mysore territory (Yesvantpur to the Mysore frontier, $51\frac{1}{2}$ miles) by the Mysore State. The length from Dharmavaram to Hindupur ($49\frac{1}{4}$ miles) was opened for traffic on the 23rd April 1893, and the Doddballapur-Hindupur section ($38\frac{3}{4}$ miles) on the 17th September 1893.

Main Line.—The construction of the sidings, platform, and shed undertaken for the Customs Department at Castle Rock have been proceeded with.

The works in connection with the supply of water to the town and the railway colony at Hubli are nearly completed; pipes are being laid to the different staff quarters, and it is expected that the entire water-supply scheme will be in full operation by the end of May 1894. The work is being carried out by the Irrigation Department. The construction of the railway reservoir, with necessary connections for the workshops and the railway colony, is also in progress.

The temporary sidings, station, and buildings at the Kistna Canal have been dismantled, and the bund on which they stood restored and handed back to the Canal authorities. The main line now joins the East Coast (State) Railway at a point east of Tadépalli station, and from the 1st January 1894 metre-gauge trains have been worked in and out of Bezvada junction, over the Kistna bridge, which is provided with a mixed-gauge track. The work of putting in additional waterways between Nandyál and Rungapuram was practically finished, and the additional waterways, at miles $2\frac{5}{8}$, $3\frac{7}{8}$, $4\frac{6}{8}$, $4\frac{7}{8}$, and $4\frac{7}{5}$, well in hand. The full section of ballast has been spread from Cumbum to Gundlakamma.

The length between Mugad and Alnávar was found to require heavy sleeper renewals. Re-sleepering throughout the section is progressing.

Poona Branch.—A permanent station has been commenced at Nira trial station, and at Shedbal work is in progress on an extension of the siding, loading bank, and platform. A goods shed with siding has been commenced at Kudchi, and at Dhúpdhál a goods shed and approach road have been made and the sidings extended. Additional goods accommodation is being provided at Belgaum, and a goods shed has been built at Khanapur.

Heavy sleeper renewals have been carried out between Belgaum and Sulebhávi stations, a distance of six miles, where the teak sleepers have been replaced by steel; also on the Salpa and Álandi gháts, where the Australian “Karri” wood sleepers laid in 1886 were so far deteriorated by excessive moisture that they had to be replaced.

The enlargement of the bridge at mile $1\frac{2}{4}$ is in progress.

Kolhápúr Railway.—Protective works for the embankment of the Udgaon bridge have been commenced. Pitching at the banks of the Kistna and Panchganga rivers is almost completed.

Mysore Section.—At Harihar an engine shed and sidings are being constructed; and goods sheds and sidings at Dávangere, Holalkere, Gubbi, and Maddur. The goods shed, ashpit, and horse and carriage dock at Kadur have been completed, and the work of enlarging the goods shed at Tiptur is in hand. At Bangalore additional sidings have been put in, and additions and alterations to the workshops are in progress.

Renewals of the pine sleepers with teak on the older portions of the line were continued for nine months of the year, but had to be stopped on account of the difficulty of getting a supply of teak sleepers. Arrangements are in hand for obtaining steel sleepers from England.

SOUTH INDIAN RAILWAY (METRE GAUGE).

37. During the official year 30 miles of 40-lb. permanent-way have been relaid with 50-lb. bull-headed steel rail material, making the total length so relaid 427·48 miles. The Tanjore-Pulliarpett ballast siding, 4·68 miles long, has been completed, and home signals have been erected at 36 stations.

The permanent station arrangements at Padálam are completed, and those at Kumarapuram are in progress. The re-arrangement of the Májavaram and Tiruvallúr stations in connection with the Májavaram-Mutupet Railway are nearly complete.

A trial station is to be opened at Sennimallai, and arrangements for the work are in progress. Goods sheds, loading banks, lay-bye sidings, and approach roads are in progress at Kálahasti, Venkatagiri, and Vencatachellum stations.

MÁYAVARAM-MUTUPET RAILWAY (METRE GAUGE).

38. The total length of the line is 54 miles.

The earth-works, bridges and culverts, ballast and permanent-way, and all works necessary for the opening of the line for traffic, have been completed. The station buildings and staff quarters are either complete or well in hand.

The permanent-way consists of second-class iron 40-lb. rails laid on pinkado sleepers.

NÍLGIRI RAILWAY (METRE GAUGE).

39. The total length of the line, when completed, will be $16\frac{1}{2}$ miles.

The present state of the works is as follows: earth-work, about 280 out of 360 lakhs of cubic feet completed, the balance remaining being mostly hard rock. Of the tunnels, three are in hand. The heading of the longest has been driven 120 feet out of 300. Fifty-eight minor bridges are complete, 15 in hand, and 65 not yet begun.

The masonry of the Bhávani bridge, two spans of 60 feet and two spans of 100 feet, is finished. Two spans of girders have been erected, and the other two are in hand. Of the remaining major bridges, one is complete, three nearly so, three are in hand, and one not begun. Seven of the 18 viaducts are in hand. Four miles of line in the plains have been ballasted, and two miles of ghât cutting have been ballasted complete, with ballast walls, side drains, &c.

Four and three-quarter miles of permanent way have been laid. All the rails and fastenings for the work are in stock, but the sleepers are only under order. Six miles of rack have been delivered, and six miles more are *en route* from England. Only 10 low-sided bogie open waggons have been delivered, the balance of the rolling-stock not having yet been ordered.

BURMA (STATE) RAILWAY SYSTEM (METRE GAUGE).

40. On the Irrawaddy district about 30 miles of line were relaid with 50-lb. steel rails, making a total of 77 out of the 161 miles to be relaid. At mile 106 the 20-foot girder bridge was scoured out, a diversion has been made, and a new 30-foot girder bridge is being built. On the suburban lines, a new goods shed has been erected at Latter Street station, and the station generally improved. The over-bridge and approaches of Judah Ezekiel Street, in Rangoon, are still in progress.

On the Sittang district the abutments of three bridges, at miles 37, 93, and 94 were scoured out during the rains, diversions have been made, and these bridges are now being rebuilt. The protective works at Pyuntaza bridge are practically completed.

On the Toungoo-Mandalay section the line at mile 205 has been raised 2 feet for a length of 3,200 feet, including a 40-foot girder bridge. This was necessitated by floods. At Mandalay shore the sidings have been re-arranged and traffic working facilitated, and a new military siding into Fort Dufferin at Mandalay, 4,000 feet in length, has been laid.

On the Sagaing-Muntho section a locomotive workshop with sidings is in course of erection at Ywataung.

On the line generally 10,152 lineal feet of new sidings have been laid, and about 70,000 sleepers renewed.

MU VALLEY (STATE) RAILWAY (METRE GAUGE).

41. The length of line from Wuntho to Mogaung, including the Katha branch, is $156\frac{3}{4}$ miles.

During the past year the construction has been steadily pushed on. Good progress has been made on the 4th and 5th divisions between Muntho and Mohnyin. A sixth division from Mohnyin to Mogaung was started in October last.

4th Division.—This division extends from Wuntho, mile $152\frac{1}{2}$, to Indaw, mile 194; and work has been carried on without interruption. Labour has been plentiful and the heavy cuttings and banks are well forward, and it is hoped that before the rains set in a gullet may be run through the Choung gorge between miles 170 and 173 wide enough to lay down the rails. Bridge-work has also progressed most satisfactorily, of the major

bridges five being completed and the remaining nine well advanced. All should be finished before the end of the current year. Of the minor bridges, 41 out of a total of 70 are complete.

Plate-laying has been carried up to mile 170 south of the Choung gorge, and rails have also been laid from the Meza river to the north of the gorge, a distance of 10 miles, material having been boated up during the monsoon months.

6th Division.—This division extends from Indaw to Mohnyin, mile 242, and also includes the branch from Nahakaung to Katha, $14\frac{1}{4}$ miles. Work was considerably retarded by a severe epidemic which occurred early in the season, and by the difficulty of obtaining carts; but nevertheless very fair progress has been made. On the Katha branch all the large bridges are complete, and on the main line eight are finished or well advanced, and the foundations of the others will probably be got in before the rains. Of minor bridges, out of a total of 194 only 54 remain to be done. Plate-laying is also actively in progress.

6th Division.—Work on this division, which extends from Mohnyin, mile 243, to Mogaung, was commenced in October last. Labour has been difficult to obtain, but will no doubt be forthcoming when the rails reach Mohnyin.

CHAPTER III.

LINES UNDER SURVEY OR PROJECTED.

IMPORTANT STANDARD GAUGE LINES.

CUTTACK-MIDNAPUR-CALCUTTA RAILWAY SURVEY (STANDARD GAUGE).

During the year under review the detailed surveys for a line from Cuttack to Calcutta have been completed and the estimate submitted. Two alternative projects have been considered.

Both projects start from Naraj on the Mahanuddy, opposite Cuttack, and run *via* Balasore and Midnapur to Panchkoora, a distance of $218\frac{3}{4}$ miles, the estimated cost of this length being Rs. 2,46,90,248. From the Mahanuddy to the 54th mile the alignment is located close to the hills, and skirts a richly cultivated country. From the 54th to the 145th mile the line runs across the deltas of the Brahminnee, Byturnee, Salindee, Burrobulong, and Subarnrika, all large rivers, through a densely populated tract under heavy rice cultivation. From the 145th mile to Midnapur, mile $193\frac{3}{4}$, the line is at a higher level and the bridging light, and from Midnapur to Panchkoora it is located under the shelter of the embankments of the Midnapur canal.

Beyond Panchkoora, the first project deals with an alignment crossing the Roopnarain and Damooda rivers, and tunnelling under the Hooghly at Budge-Budge. The total cost of this project, 254 miles in length from Naraj to Nangi, a station on the Eastern Bengal (State) Railway, works out to Rs. 4,13,33,350, a mileage rate of Rs. 1,62,690. From Cuttack into Sealdah station the length of line by this alignment will be $266\frac{3}{4}$ miles. It is proposed to construct the tunnel under the Hooghly of cast-iron segments, and allowing 1 in 80 graded approaches, the total length of the tunnel and approaches will be 15,675 feet, or nearly 3 miles, the tunnel proper being 12,235 feet, of which 3,400 feet will be brick "cut and cover." The total cost is estimated at Rs. 54,17,928. A considerable saving might be effected by using 1 in 50 approach grades to the tunnel, reducing the length of tunnel to 6,600 feet (of which 1,000 feet would be "cut and cover"), and the cost to Rs. 37,88,091. A scheme for a waggon ferry over the Hooghly instead of a tunnel has also been considered, and the cost found to be Rs. 8,30,667.

The crossings of the Loopnarain river also presents great difficulties, and alternative projects for bridging and tunnelling have been considered, and it has been estimated that a bridge with its approaches would cost Rs. 25,07,448, and a tunnel similar in design to the tunnel proposed at Budge-Budge, with 1 in 50 graded approaches, Rs. 21,30,773.

Finally, as regards this project, by using a waggon ferry at Budge-Budge, and by making certain reductions under various heads of the estimates, it seems not improbable that the total length of 254.13 miles might be constructed at a mileage rate of Rs. 1,29,976, a grand total of Rs. 3,30,30,800.

The second project contemplates running a line almost straight from Panchkoora to Diamond Harbour, and on this alternative no waterway of any importance will be required. At Diamond Harbour, where the Hooghly is $1\frac{1}{2}$ miles broad, a waggon-transshipping ferry is proposed, and shelter docks will be required on both banks of the river, with hydraulic lifting apparatus for transferring loaded waggons from barges to the rails, and *vice versa*. The cost of this project from Cuttack to Basuldunga, a station on the Diamond Harbour branch of the Eastern Bengal (State) Railway, is estimated at Rs. 3,51,57,310 for $257\frac{3}{4}$ miles, a mileage rate of Rs. 1,36,401. The total distance by this alignment from Cuttack to Sealdah will be $259\frac{1}{2}$ miles.

SINGIA-MADAREEPORE-CHANDPUR RAILWAY SURVEY (STANDARD GAUGE).

2. With a view of ascertaining the practicability or otherwise of constructing a line to connect the Bengal Central and Assam Bengal Railways, a reconnaissance survey was ordered of the rivers and country between Singia and Chandpur.

Between Singia and Madareepore, a distance of 64 miles, no difficulty presents itself, and a line over this section has been easily located; but between Madareepore and Chandpur, 15 miles, no permanent location has as yet been decided, as the changing courses of the Megna, Ganges, and Árial Khán rivers require further study and careful survey.

RAE BARELI-BENARES RAILWAY SURVEY (STANDARD GAUGE).

3. Starting from Rae Bareli, the terminus of the Lucknow-Rae Bareli branch of the Oudh and Rohilkhand (state) railway ($48\frac{1}{2}$ miles from Lucknow), an alignment for a railway has been located through Pertabgarh to Benares Cantonment station on the Oudh and Rohilkhand main line a distance of 139 miles. The cost of the construction of this line has been estimated at Rs. 83,16,000—a mileage rate of nearly Rs. 60,000.

The alignment runs through a country which, as a rule, is well cultivated and thickly populated, though tracts of uncultivated “usar” land occur at frequent intervals. There are no great difficulties to contend with, and the only river of any size to be bridged is the Sai, which it is proposed to cross with four spans of 100-foot girders, the piers being founded on wells sunk 40 feet below the river bed.

The line will run through Jais and Amethi to the Sai, across to Pertabgarh, and thence *viâ* Badshahpur and Bhadohi to the cantonment station at Benares.

GHÁZIABAD-MORADABAD-CHANDAUSI RAILWAY SURVEY (STANDARD GAUGE).

4. Orders for this survey were issued in September 1893.

The proposed railway consists of a main line running from the Gháziabab junction of the North-Western (state) and East Indian Railways *viâ* Gurmuktesur to Moradabad a station on the Oudh and Rohilkhand (state) railway, a distance of $85\frac{1}{2}$ miles, and a branch 45 miles long from the 52nd mile of the main line near Gurmuktesur to Chandausi, also a station of the Oudh and Rohilkhand (state) railway, a total length of line of about 131 miles.

The main line would have to cross the Ganges river at Gurmuktesur, a small town on the west bank and a place of peculiar sanctity to the Hindus; but otherwise the line would be a fairly easy one to construct, and the distance from Moradabad to Delhi would be reduced from 165 to 98 miles.

The country to be served is fairly well irrigated, and the line would give increased facilities for export of produce from the Terai, as at present there is a large trade still carried by cart from Moradabad and the country west of it to Meerut. A large passenger traffic may also be expected, as vast numbers of pilgrims are always passing to and fro along the roads to Gurmuktesur, and at some of the fairs at this place nearly a million persons attend. Besides Gurmuktesur, the main line would serve Amroha (36,000), Hapur (15,000), and other larger towns; and the Chandausi branch, in addition to carrying pilgrims to and from Gurmuktesur, would also pass through Sambhal (37,000).

At the close of the year the Gháziabad-Moradabad section had been surveyed and about 8 miles of the Chandausi branch.

DELHI-MINCHINABAD-BAHÁWALPUR RAILWAY SURVEY (STANDARD GAUGE).

5. As mentioned in the last Administration report, two alternative routes were surveyed—a northern route by Rohtak, Jínd, Tohanal, and Rattia, to the Bhátinda-Baháwalpur railway, and a southern route *viâ* Rohtak and Hási. From the preliminary reports and estimates submitted in May, the southern or Hási route was considered to present fewer advantages, and was abandoned. Orders were then issued to make a detailed survey of the route *viâ* Jínd.

The route thus selected starts from Delhi, runs parallel to the Rajputana-Malwa railway for about 3 miles, and clearing the suburbs of Delhi proceeds direct to Rohtak (mile 42). From Rohtak the line turns north to Jínd (mile 75), and then inclining to the west, passes Tohanah (mile 114) and joins the Bhátinda-Baháwalpur railway at Bhátinda (mile 183). From Bhátinda the line runs *viâ* Minchinabad at the 265th mile to Samásata, a total distance of 400 miles from Delhi.

The alignment traverses a rich grain country, a very large portion of which is irrigated by the Western Jumna and Sirhind canal systems, and by inundation canals

in the Sutlej Doab. There are no engineering difficulties, and the only river of any size to be dealt with is the Ghaggar, between Tohanah and Bhátinda; the grades will be light and the curves easy. In deference to the wishes of the Baháwalpur Darwar, it has been decided to make the junction with the North-Western (state) railway at Samásata instead of at Baháwalpur, though a saving in distance of 7 miles might be effected by using the latter station.

During the past season the Tohanah-Bhátinda section has been surveyed and revised estimates are now under preparation for the whole scheme.

WAZIRABAD-MOOLTAN RAILWAY SURVEY (STANDARD GAUGE).

6. The survey for a line of railway on the standard gauge from Wazirabad to Mooltan, a distance of about 200 miles, was completed during the year, and the report and the estimates for the project have been received and are under consideration.

ZHOB VALLEY RAILWAY, DERA ISMAIL KHAN-MURTIZA SECTION (STANDARD GAUGE).

7. The construction of this line has been postponed for financial reasons.

KASHMIR RAILWAY PROJECT (GAUGE UNDECIDED).

8. The consideration of the construction of a line into Kashmir, alternative projects for which were noted on in the last report, has been deferred for financial reasons. A route *viâ* Abbottabad is generally admitted for strategical purposes to present the greatest advantages, but this question and the question of gauge will be settled later should the construction of a railway be finally decided on. During the year abnormal floods occurred in the Jhelum and other streams which a line *viâ* Abbottabad would have to cross, and an officer was detailed to note flood levels and gather information as to the damage that a recurrence of such floods might cause to a railway located on the route surveyed.

MÁRI-ATTOCK RAILWAY (STANDARD GAUGE).

9. *From mile 74 to 96.*—Financial reasons have prevented any start being made on the works on this section. The estimates and designs are still under consideration.

NORTH-WESTERN (STATE) RAILWAY (STANDARD GAUGE).

10. *Ferry lines to serve Dera Ismail Khan and Dera Ghazi Khan.*—The Dera Ismail Khan ferry line, known as the Karlu branch, laid in the autumn of 1892 and noted on in last year's report, was seriously breached before opening for traffic. The Ghazi Ghat branch was never laid at all, as the floods rendered its construction impossible.

In view of the impracticability of keeping up these branches during the monsoon, it is under consideration whether the Karlu branch should not be dismantled, and the idea of a branch to Ghazi Ghat abandoned; the material for these branches being, however, kept ready stacked in case emergency lines should be required.

Doubling the Kotri-Kurrachee Section.—Another survey for doubling the North-Western (state) railway between Kotri and Kurrachee, a length of about 100 miles, has been undertaken and practically completed during the year. The estimates, &c., for the project are under submission.

KOTRI-ROHRI RAILWAY SURVEY (STANDARD GAUGE).

11. During the past year the reconnaissance for an alignment on the left bank of the Indus between Kotri and Rohri was completed, and it seems possible that a line could be constructed at a mileage rate of Rs. 77,490, including the cost of a bridge over the Indus at Kotri.

The length of line would be about 206 miles, giving a total cost of Rs. 1,59,62,940.

The alignment selected by the reconnaissance follows closely the existing line of road from Hyderabad to Rohri through Mora, but it is under consideration whether a line starting from Jam Tando or Tando Alahyar on the Hyderabad-Umarkot line, and passing through Tando Adam and Shahdadpur, both important trade centres, would

not open up a wider range of country and prove more useful in developing the tracts to be served by the proposed Jamrao canal than a line along the river bank through Sakrand and Hala. It has been decided to have this question investigated and detailed surveys made during the present year.

SAUGOR-KATNI RAILWAY RECONNAISSANCE SURVEY (STANDARD GAUGE).

12. A survey for this railway, the length of which will be about 118 miles, was made in 1883-84 as a part of the large scheme for a railway from Biláspore *viá* Umariá, Katni, and Saugor to Etawah (Bina). The sections from Biláspore to Katni and Bina to Saugor have since been constructed, and a reconnaissance has been made during 1893-94 of the alignment between Saugor and Katni with a view to its possible improvement. This reconnaissance has proved successful, inasmuch as easier grades and curves have been obtained than prevailed on the alignment of 1883-84 without materially enhancing work or increasing length.

RUTLAM-UJJAIN RAILWAY (STANDARD GAUGE).

13. The preliminary survey of this line, about 59 miles in length, entrusted to the Bombay, Baroda, and Central India Railway Company, was completed during the year, and the report, with plans and estimates, have been received. The estimates amount to Rs. 47,40,309, or Rs. 79,269 per mile. The line is being located.

RUTLAM-MUTTRA RAILWAY (STANDARD GAUGE).

14. The Bombay, Baroda, and Central India Railway Company completed the survey of the projected line from Rutlam northwards *viá* Jhalrapatam, Kerowli, and Bhurtpore to Muttra, a distance of about 400 miles. The estimates work out to Rs. 3,05,79,168, or Rs. 76,448 per mile. The work of locating the line from Rutlam to Bára is in progress.

TÁPTI VALLEY RAILWAY (STANDARD GAUGE).

15. In connection with the project for this railway, the length of which will be about 271 miles, reference was made in last year's report to the survey of the western portion from Surat, *viá* Songad and Nandurbár to Amalnar carried out by the Bombay, Baroda, and Central India Railway. This has been reported on by the civil officers of the districts concerned. During the year 1893-94 the Great Indian Peninsula Railway Company completed the survey of the eastern portion (110 miles) from Manmád, *viá* Dhulia and Amalnar to Jalgaon. The estimates amount to Rs. 1,16,24,831, or Rs. 1,05,680 per mile. For this portion alternative alignments have been suggested by the survey officers at certain points. The project has been referred for opinion to the civil authorities, on receipt of whose replies the whole scheme will be considered.

RAIPUR-SONPUR RAILWAY SURVEY (STANDARD GAUGE).

16. The reconnaissance of a line from Raipur on the Bengal-Nágpur Railway to Sonpur, a distance of about 160 miles, has been sanctioned.

The proposed line would run fairly direct from the present Raipur station to Sonpur, where it joins the Sambalpur-Khurda project surveyed last year.

SAMBALPUR-KHURDA RAILWAY PROJECT (STANDARD GAUGE).

17. The construction of a line from Sambalpur to Khurda, 190½ miles long, the survey and estimate of which were noted on in the last Administration report, has been postponed for want of funds. The project also contemplates an extension to Pooree to serve the pilgrim traffic.

RAIPUR-VIZAGAPATAM RAILWAY PROJECT (STANDARD GAUGE).

18. A survey of this line was made in 1882-83, 230 miles were located, and a reconnaissance made of the remaining 110 miles. The line would pass through a sparsely inhabited country, and have to contend with considerable engineering difficulties, and for financial reasons it has been decided to let the project stand over for the present.

SINI-MIDNAPUR RAILWAY SURVEY (STANDARD GAUGE).

19. A line from Sini on the Bengal-Nágpur Railway to the town of Midnapur was originally surveyed in 1890 with ruling grades of 1 in 100. It was again resurveyed in 1891 with a ruling grade of 1 in 125, and has now been permanently marked out with pillars, certain improvements being made in the alignment, and all curves of half-mile radius eliminated on grades of 1 in 125, and one-mile radius curves substituted. The total length of the line will be about 100 miles.

EAST COAST (STATE) RAILWAY (STANDARD GAUGE).

20. For financial reasons, as noted in the last administration report, it was considered expedient to postpone the construction of the Godávari bridge, estimated to cost 55 lakhs, until the northern section of the east coast line was completed to Cuttack, and an estimate was sanctioned for the establishment of a waggon ferry. On a more thorough investigation of the project, it was found that large and expensive training works would be required to ensure the safe working of a waggon ferry during the monsoons, and it is now under consideration whether the present traffic cannot be dealt with by ordinary transshipment.

No satisfactory site for the bridge over the Mahanuddy has as yet been selected, but careful borings are in progress along the gorge at Naraj with a view to ascertaining if the deep channel cannot be bridged by a single span.

BEZWADA-MADRAS RAILWAY SURVEY (STANDARD GAUGE).

21. This line extends from Madras to Bezwada, the present southern terminus of the East Coast (state) Railway. The total length is 291 miles, made up as below :—

	Miles.	No. of Division.
Madras to Gúdúr	86	1
Gúdúr to Nellore (existing metre gauge line to be converted)	24	2
Nellore to Ongole	80	
Ongole to Bezwada	83	3
Ponnur to Guntúr (branch)	18	

A preliminary survey was made in 1890 and 1891 by the Madras Railway Company. The present survey was commenced in December 1893.

There are three parties in the field, and the progress made up to the 31st March 1894 is as follows:

No. 1.—Sixty miles located; complete project and estimates sent in for the portion from Madras to Ennore (10 miles), which it is desirable to construct at once as a suburban passenger line.

No. 2.—Fifty miles located.

No. 3.—The whole located and work practically finished.

IMPORTANT METRE GAUGE LINES.

BENGAL AND NORTH-WESTERN RAILWAY, COMPANY'S SECTION (METRE GAUGE).

22. Surveys of the following lines in connection with the linking up of metre gauge lines at Cawnpore and Kamálpur have been completed during the year, and drawings, reports, and estimates submitted :—

1. Gogra river bridge and approaches.
2. Gogra Ghât-Kamálpur survey, $38\frac{1}{2}$ miles.
3. Lucknow-Cawnpore survey, $43\frac{1}{4}$ miles.

The estimated cost of these projects is :—

	Rs.
No. 1 { (i) Cost of bridge over the Gogra river	28,43,891
(ii) Cost of approaches	2,21,234
No. 2	17,73,946
No. 3	19,53,506
Total	67,92,577

BAREILLY-SORON RAILWAY SURVEY (METRE GAUGE).

23. In December 1893 orders were issued for the survey of a line of railway from Bareilly, the terminus of the Rohilkund and Kumaon railway system, to Soron, on the Rajputana Malwa, a distance of 60 miles, to serve as a connecting link between the metre gauge systems north and south of the Ganges.

Leaving Bareilly, it is proposed to cross the Ramgunga river on the existing bridge of the Oude and Rohilkhand (State) railway, a mixed gauge being laid; but the flood-spill beyond will necessitate some 3,000 lineal feet of new bridging. Beyond the Ramgunga kadir the line runs past the town of Budaon (40,000) through an easy and well cultivated country to Kuchla Ghat, where it is proposed to bridge the Ganges.

Of actual survey, including alternative lines, about 45 miles have been surveyed, leaving 25 miles to be completed next season; the Ganges crossing has been located and the borings are in hand.

UMARKOT-PACHPADRA RAILWAY SURVEY (METRE GAUGE).

24. This survey, a continuation of one made some years ago to Umarkot from Shadipalli, the present terminus of the Hyderabad-Umarkot line, begins at the river Nara, about 16 miles north-west of the town of Umarkot, and terminates near Pachpadra, where it joins a branch line of the Jodhpore-Bickaneer railway system.

The length of the line from the river Nara to its terminus near Pachpadra is $185\frac{3}{4}$ miles, and in addition to this main line an alternative length of 12 miles was surveyed from mile $178\frac{1}{2}$ on the main line to Bálotra, the next station to Pachpadra on the open line; the length of the line from the river Nara to Bálotra along this alternative being $190\frac{1}{2}$ miles.

The only bridge of any importance on the line will be the one across the river Nara. A few openings with less waterway will be required for a couple of canals in the Nara Valley for some streams among the rocky hills in the neighbourhood of Balmir in Jodhpore territory.

The country for the first 16 miles through the valley of the Nara is very easy, but after this sand hills begin and continue right up to Pachpadra. In Jodhpore territory, about 105 miles from the river Nara, there are ranges of rocks interspersed with sandhills, through which the line has to pass for 25 miles to the town of Balmir.

From Balmir to Pachpadra, a distance of 55 miles, no difficulty presents itself, only one small rock outcrop occurring at 35 miles from Balmir.

The Darbar is desirous of constructing the portion of the line, about 100 miles, which will pass through the Jodhpore State.

CHITTAGONG-AKYAB-MINHILA RAILWAY SURVEY (METRE GAUGE).

25. During 1893-94 a detailed survey for a line of railway intended ultimately to connect the Indian railway system with that of Burma was started.

Work was commenced at Minhla, a small town on the Irrawaddy, and carried as far as the top of the main range dividing Burma from Arracan.

The line for the first 36 miles from Minhla runs in a westerly direction over rather rough country covered with jungle. The work will be moderately heavy, and a 1 in 100 grade frequent. There are no towns or villages of any importance on this length, and a good deal of difficulty was experienced during the survey in procuring water for the men engaged on it. From the 36th mile to the 47th the country is exceedingly difficult, and, although the 1 in 100 grading has been adhered to, curves of 8° have in two cases been found necessary.

At mile 47 the line emerges into open country and enters the Napeh valley. Napeh is a large scattered village of some 300 houses, and the whole valley, which is, roughly, 10 miles long by 1 mile wide, is thickly strewn with flourishing hamlets. The line crossing the Man river runs for some seven miles in the valley, and then goes through rough country for four miles to the small village of Milnwin at the mouth of the Man gorge. After again crossing the Man the line follows the gorge of the river, the work being exceedingly heavy, curves of 10° are necessary and frequent, and a number of short tunnels unavoidable.

At the Chin hamlet of Chowk Chin it is necessary to adopt a grade of 1 in 40, which continues without a break for 21 miles to the top of the pass. Throughout this length

the work is heavy to an altogether unusual degree. The summit is pierced by a tunnel 3,900 feet long, from which the line will descend with continued 1 in 40 grading into Arracan proper.

There seems to be no probability of any considerable local traffic over this portion of the line, as, with the exception of the six miles in the Napeh valley, the country is covered with thick jungle and very sparsely populated.

MANDALAY-KUNLON RAILWAY SURVEY (METRE GAUGE).

26. The survey of the Mandalay-Thebaw section of this project, a length of 125 miles, was noted on in the last Administration report.

Orders for the continuation of the survey from Thebaw to Kunion have since been issued, and field work was resumed in December 1893. Fair progress was made to the end of March 1894, by which date 75 miles of the most difficult portion of the work were completed, and there is every prospect that the survey will be finished during the season, and estimates for the whole line submitted by September 1894. The estimated cost is not likely to exceed an average of Rs. 90,000 per mile for a total length of about 260 miles.

BRANCHES AND LINES (STANDARD GAUGE) OF MINOR IMPORTANCE.

EAST INDIAN RAILWAY (STANDARD GAUGE).

27. Plans and estimates have been submitted for a branch 8.25 miles long, from Bally station to the Hooghly, below the Botanical Gardens, with a yard and staithes for shipping coal. The approach has been estimated to cost Rs. 5,92,204 and the coal depôt at Garden Reach Rs. 8,81,200, or a total of Rs. 14,73,404. The project is under consideration.

A project for a branch line from the East Indian Railway into Háthras City, a distance of 5.62 miles is also under consideration.

RÁMPUR-RAMNAGAR RAILWAY SURVEY (STANDARD GAUGE).

28. The construction of a branch of the Oudh and Rohilkhand (State) railway system to Ramnagar, a small town at the foot of the hills within easy reach of Naini Tal and Ranikhet, was mooted long ago and surveyed in 1870, but after some discussion the scheme was allowed to drop.

During the past season the Ramganga river has been bridged on the Bareilly-Moradabad chord line, and one of the principal difficulties of running a line to Ramnagar eliminated.

Two alternatives present themselves: (1) a line starting from near the Ramganga bridge and running by Tanda and Kashipur to Ramnagar, keeping on the west of the Kosi river; (2) a line from Rámpur *via* Suar and Manpur, on the east of the Kosi, which would have to be bridged. This latter alignment, which would help to open out the Rámpur State, would also serve Kashipur, but not the trade centre of Tanda. Of these two projects, the former would seem to best suit trade purposes, and would also be the least expensive; but the latter is strongly advocated by the Rámpur Council, who offer, if this alignment is adopted, to advance the funds necessary for its construction. The distance by this latter alternative is expected to be about 52 miles, and of this length 23 miles have been completely surveyed.

AONLA-BUDÁON RAILWAY SURVEY (STANDARD GAUGE).

29. This survey was referred to in the last Administration report.

The proposed line, 19 miles in length, would run through a richly cultivated and densely populated district from Aonla, a station on the Oudh and Rohilkhand (state) railway, to Budáon, a large town of nearly 36,000 inhabitants. The country presents no engineering difficulties, being almost flat, and only one nullah of any size, the Khurrah, would have to be bridged.

The cost of construction is estimated at Rs. 61,500 per mile, with new 60-lb. steel rails on steel transverse trough sleepers; but a saving of about 3 lakhs might be effected by using the second-hand 60-lb. steel rails and wrought-iron saddle sleepers released by the renewals on the main line.

FEROZEPORE-LUDHIÁNA RAILWAY SURVEY (STANDARD GAUGE).

30. This survey is alluded to in the last Administration report.

A survey was made by the late Sind, Punjab, and Delhi Railway Company for a railway from Ludhiána to Raewind passing through Ferozepore, but since then the line from Raewind to Ferozepore, including the bridge over the Sutlej, has been completed on the standard gauge, and a new survey has been ordered for the remaining length. The trade on the route to be traversed has also materially altered. The opening of the Rewari-Ferozepore railway (metre gauge) and the Rájpura-Bhátinda railway (standard gauge) has diverted traffic from both Ludhiana and Ferozepore; and although there is still a large traffic to both these places along the main road which connects them, it is much less than formerly. The country traversed is, however, extremely easy, and it seems probable that as a branch line the returns would prove remunerative.

The line would shorten the distance from Ludhiána to the west, and would give another connection with Ferozepore along the lower bank of the Sutlej.

At the close of the year about 50 miles of the survey was completed out of the total of 76 miles to be done.

UMBALLA-PATIALÁ RAILWAY SURVEY (STANDARD GAUGE).

31. The survey for a direct line of railway on the standard gauge from Umballa to Patialá, a distance of about 26 miles, sanctioned in August 1892, was completed in June 1893, and the report and estimates of the project are now under consideration.

CONNECTIONS WITH BHAGWANGOLA (STANDARD GAUGE).

32. (a.) From the Azímganj branch of the East Indian Railway.—This project when originally started was intended to utilize the old Nalháti State railway stock, now no longer available, and has been estimated to cost 55 lakhs of rupees for a distance of 25 miles. The project included a bridge over the Bhagiruthee river consisting of 5 spans of 200 feet at an estimated cost of 10 lakhs of rupees, and a branch from Jeaganj to Berhampur.

(b.) By a line *viá* Kutwa to Mugra station on the East Indian railway.—This project seems to offer no fair prospects of pecuniary success. The line would be 116 miles long, and the upper section from Kutwa through Berhampur to Bhagwangola would pass through heavily flooded districts, and the changing course of the Bhagiruthee would have to be bridged. The lower section, Kutwa to Mugra, might, however, as a feeder to the East Indian railway, prove to be remunerative, and may be dealt with by unaided private enterprise.

(c.) By a line *viá* Krishnaghur to Ránaghat, Eastern Bengal (State) Railway.—This line was originally started as a famine relief work, and the land on the Krishnaghur-Ránaghat section, $20\frac{1}{2}$ miles, taken up and about 75 per cent. of the earth-work done. In 1887 further work on this section was abandoned, as it was ascertained that, if completed, the line could not successfully compete for the river-borne trade.

The District Board of Nuddea has recently put forward a proposal to raise funds and construct a steam tramway from the Choorni river to Krishnaghur at a cost of Rs. 6,25,000, utilising the old earth-work, and also to extend the standard gauge from Ránaghat to the Choorni, a distance of $1\frac{1}{2}$ miles, at a further cost of Rs. 27,720. This scheme is under consideration.

JUNGSHAHI-TATTA RAILWAY SURVEY (STANDARD GAUGE).

33. With a view to tapping the trade on the left bank of the Indus, which at present finds its way to the sea by boat, a detailed survey has been made during the past year and estimates submitted for a line from Jungshahi, a station on the North-Western (State) Railway, *viá* the town of Tatta, to the mouth of the Baghiar canal, a distance of 19 miles.

There are no great engineering difficulties to contend with, and the only works of any magnitude would be those entailed by crossing the depression in which the Chattaji river runs at the second mile from Jungshahi, and cutting through the Mukli range of hills at the tenth mile. Easy gradients and curves are obtainable.

By using 65-lb. double-headed rails and deodar sleepers, released by the renewals on the main line of the North-Western (State) Railway, it is estimated that the cost of construction would not exceed Rs. 30,000 a mile.

SHORANUR-COCHIN AND CALICUT-CANNANORE RAILWAYS (STANDARD GAUGE).

34. A private firm has applied for a concession to construct these lines, 61 and 50 miles respectively, on the standard gauge. The Madras Railway has already made surveys, and the projects are under consideration.

SHORANUR-TRICHUR RAILWAY SURVEY (STANDARD GAUGE).

35. This survey is included in that of the proposed Shoranur-Cochin line.

PÁLGHAT-KURAPADNA RAILWAY SURVEY (STANDARD GAUGE).

36. This line has been practically abandoned in favour of the proposed Shoranur-Cochin route.

BRANCHES AND LINES (METRE AND SPECIAL GAUGES) OF MINOR IMPORTANCE.

SULTANPUR-BOGRA AND HILI-BHOWANIGANJ RAILWAY PROJECTS (METRE GAUGE).

37. Proposals for the construction by private firms of these two branch lines as feeders to the Northern section of the Eastern Bengal (State) Railway are still under discussion.

The Sultanpur-Bogra, originally proposed and started as a famine relief work, would be about $24\frac{1}{2}$ miles in length, and the cost of its construction may be roughly estimated at Rs. 50,000 a mile.

The Hili-Bhowaniganj would be about 40 miles in length, and by using the district road might be comparatively cheaply constructed.

Detailed surveys and estimates for these two branch lines have not as yet been made.

BENGAL AND NORTH-WESTERN RAILWAY, TIRHOOT SECTION (METRE GAUGE).

38. The Garhara-Monghyr-Khagaria and Begamsarai-Hajeepore surveys, 40 and $44\frac{1}{4}$ miles respectively, have been completed, and the estimates and reports for the former are ready for submission, and those for the latter are in course of preparation.

GONDA-BALRÁMPUR-OOTRAWLIA-TULSIPUR RAILWAY (METRE GAUGE).

39. The survey of the Gonda-Balrámpur-Ootrawlia-Tulsipur extension of the Bengal and North-Western railway, 42 miles long, has been finally completed, and estimates submitted. The estimated cost of this extension worked out to Rs. 17,90,085 exclusive of rolling-stock.

ROHILKUND AND KUMAON RAILWAY, LUCKNOW-BAREILLY SECTION (METRE GAUGE).

40. The project for the construction of the Sitapur grain siding, referred to on page 38 of the last report, has been abandoned at the request of the Municipal Board of that town.

KICHHA-KASHIPUR RECONNAISSANCE SURVEY (METRE GAUGE).

41. A reconnaissance survey has been arranged for a line from Kichha on the Company's section of the Rohilkund and Kumaon Railway to Kashipur.

KALKA-SIMLA RAILWAY SURVEY (METRE GAUGE).

42. The scheme for a railway from Kalka to Simla was noted on in the last Administration report, and during the current year approximate estimates for the project have been submitted.

Two alternative locations are now under consideration :—(1) for a rack line 46·6 miles in length with adhesion sections; (2) for an adhesion line 57·1 miles in length with a ruling gradient of 1 in 33,—the former estimated to cost about 91 lakhs, a mileage rate of Rs. 1,96,000; the latter 81½ lakhs, a mileage rate of Rs. 1,43,000.

A line located by the first mentioned scheme would run east from Kalka, and, skirting the Tipra spur, reach Rájpura with only one short rack section. From thence the line following the river would cross the cart road near the Dharmpur toll-bar in cutting, and run *viá* the Dacro bridge and Subathu to Simla, with rack sections at the Kundaghât saddle and the Asni river. The second scheme proposes a line from Kalka to the Dacro bridge as in scheme 1, but eliminating the short rack section near Rájpura. From the Dacro bridge the line would run to Matthan, tunnel through the Subathu range, and thence *viá* Boch and Lawi to Chambí Ghât at the west end of the Solon ridge. From this point it would descend to the Asni river, and then rising through Junga terminate near “Ravenswood” in Simla, with a depôt at “Torrentium” or some convenient site near Bishop Cotton’s school.

The works involved will be necessarily heavy, cuttings will be deep, and the many sharp spurs met with will have to be tunelled. Stone will be costly to obtain at bridge sites, and landslips will have to be guarded against. In the meantime further improvements are being made in alignment, and it is hoped that completed projects will be ready for submission at an early date.

AHMEDABAD-DHOLERA RAILWAY (GAUGE 2' 6").

43. Nothing further was done during the year in connection with the Ahmedabad-Dholera Railway project, the concession granted to the old syndicate that was promoting it having lapsed. But in October 1893 a private capitalist approached the Local Government with a proposal to make 2' 6" gauge line which would start from Ahmedabad, and crossing the Ellis bridge run along the existing road to Dholka (25 miles). The proposal is under consideration.

AHMEDABAD-PRANTIJ RAILWAY (METRE GAUGE).

44. The final alignment and gauge of the Ahmedabad-Prantij Railway project (50 miles) was still under consideration during the year.

MORVI RAILWAY (2' 6" GAUGE).

45. In connection with a proposed redistribution of the proprietorship of the railways in Káthiáwár, proposals were submitted to the Local Government for the eventual conversion of the 2' 6" gauge Morvi Railway to the metre gauge. At the request of the political agent in Káthiáwár, the manager of the Morvi Railway submitted approximate estimates of the cost of construction. Revised estimates have been called for. The present line runs along the Rájkot road from Wadhván to Dhália; it is considered that if the line is changed to a broader gauge, it must be put off the road. Orders have accordingly been issued for the selection of an altogether new alignment between those points to run as direct as possible from Wadhván to Thán, and to completely avoid the Bhagavo river. This involves a new survey of about 32 miles. The cost of this survey and of preparing revised estimates of the cost of converting the rest of the line is estimated at about Rs. 5,000. The Jam Saheb of Jámnnagar having consented to advance this sum on the understanding that the future proprietors of the line, whoever they may be, will reimburse it to the Jámnnagar State as soon as the scheme is sanctioned by Government, orders were issued towards the close of the year for the work to be put in hand.

EXTENSION OF THE GAEKWAR'S RAILWAYS.

46. At the request of the Baroda Darbar, the Bombay, Baroda and Central India Railway Company carried out during the year a survey for an extension of the Gaekwar's Dabhoi Railway on the 2' 6" gauge from Báhárdpur to the Songír quarries a distance of about 9½ miles. This line involves the crossing of two rivers, the Unch and the Heran. Proposals have been made for crossing the latter by means of a low level bridge, which would reduce the estimated cost of the line from Rs. 4,80,682 to Rs. 3,97,682, or Rs. 42,083 per mile. The project is awaiting the settlement of certain details which have been referred back to the Railway Company's officers.

The Baroda Darbar also asked for a survey of a line on the standard gauge from Vishvámítri to Kanjat (22·7 miles), with a possible extension to Jambusar and Broach. The survey was carried out during the year, and estimates, amounting to Rs. 12,18,070, have been submitted by the Bombay, Baroda and Central India Railway administration. The Company's officers, however, consider that the prospects of traffic do not warrant them in recommending a standard gauge line for this extension, which, if constructed, should, they consider, be on the 2' 6" gauge, and connect with the existing lines on that gauge at Vishvámítri.

The route for a railway from Pátan to Kherálu *viá* Sidhpur was also surveyed at the request of the Baroda Darbar. The Bombay, Baroda, and Central India Railway Company's officers, however, do not consider that either the Darbar or the Company would derive any great benefit commensurate with the expense from the construction of such a connecting line between two points which are already linked by the existing lines *viá* Mehsána.

Estimates for an extension of the existing Gaekwar's Mehsána-Pátan line to Harij from Pátan, or, as an alternative, from Manúnd Road, have been got out at the request of the Darbar. From a traffic point of view, the extension from Pátan is considered preferable, and the Darbar has been so advised. The estimate for a metre gauge line from Pátan to Harij (23·3 miles) amounts to Rs. 7,54,721 and to Rs. 7,01,400 from Manúnd Road to Harij (21·2 miles).

His Highness the Gaekwar's Government having revived the proposal for the construction of an extension from Visnagar on the Kherálu branch to Vijápur, which was surveyed in 1887, estimates for the different gauges have been prepared and submitted. They amount as follows: metre gauge, Rs. 5,34,282; 2' 6" gauge, Rs. 4,94,345; standard gauge, Rs. 7,96,147. The length of the line is 16 $\frac{3}{4}$ miles.

RÁJPIPLA RAILWAY (2' 6" GAUGE).

47. In March 1893 the Administrator of the Rájpipla a State submitted proposals for constructing, at the cost of the state, a 2' 6" gauge railway to connect Nándod the principal town in the State, with Anklesvar, a station on the Bombay, Baroda, and Central India Railway. The distance between the two points is about 40 miles. From a trial survey carried out by the Bombay, Baroda, and Central India Railway Company's officers, it is estimated that this line could be made on the 2' 6" gauge for Rs. 14,37,588, excluding rolling-stock, or about Rs. 35,583 per mile. Since then the Railway Company have estimated that the section between Anklesvar and Párdi, a distance of 20·3 miles, will cost Rs. 6,77,020, or Rs. 33,351 per mile; but until the line is located and detailed estimates are prepared, nothing more approximate can be given. The State has deposited the requisite funds for these surveys and estimates, which were undertaken by the Bombay, Baroda, and Central India Railway Company towards the end of the year. It is proposed to construct the line in the first instance from Anklesvar to Párdi only, and thereafter to extend it as funds can be spared.

RÁJKOT-JÁMNAGAR RAILWAY (METRE GAUGE.)

48. During the year under report the Jam Sahib of Jámnagar (Navánagar) submitted proposals through the political agent, Káthiáwár, for the construction of a metre gauge railway from Rájkot *viá* Dhrol to Jámnagar, with a branch from Dhrol to the port of Jodiya. The distance from Rájkot to Dhrol is 32 miles, from Dhrol to Jámnagar 24 miles, and from Dhrol to Jodiya 14 miles, total 70 miles. The railway is to be constructed at the expense of the Jámnagar State. The project has been sanctioned, and a detailed survey of the route has been carried out prior to the commencement of construction works. This railway is roughly estimated to cost about 30 lakhs.

KOLHÁPUR RAILWAY (METRE GAUGE).

49. In July 1891 the Board of Directors of the Southern Mahratta Railway inquired whether there was any likelihood of any of the Kolhápúr Railway being extended to the western coast, and were informed in reply that the Local Government was not then prepared to consider the question. From certain correspondence that came up in January 1894 it is known that the Kolhápúr Darbar during the past year carried out the survey of an extension of their line from Kolhápúr to Rájápur on the western frontier, a distance of about 37 miles. Rájápur is about 34 miles from the coast.

KURNOOL ROAD-KURNOOL RAILWAY PROJECT (METRE GAUGE).

50. This branch, 32 miles in length, would serve as a feeder to the Southern Mahratta Railway, and has been estimated to cost Rs. 11,32,022, or Rs. 35,376 a miles.

The Government of India are not at present in a position to supply the funds for this work, and the construction of the branch is left to private enterprise.

NANJANGÚD-GUNDLAPET RAILWAY (METRE GAUGE).

51. The further consideration of the project for an extension of the Mysore Railway from Nanjangúd to Gundlapet, and later on to the foot of the Nílgiiri hills, has been deferred, pending a decision in the matter of the proposals put forward in connection with the construction of West Coast railways referred to in the following paragraph.

WEST COAST RAILWAYS (METRE GAUGE).

52. Reconnaissances from Mangalore to Arsikeri on the Southern Mahratta Railway, 137 miles, Hassan to Mysore, 66 miles, and Nanjangúd to Erode, 114 miles, have been undertaken, and the proposals of a private firm to construct them on the metre gauge are under the consideration of the Government of India.

COONNOOR-OOTACAMUND RAILWAY SURVEY (METRE GAUGE).

53. A survey has been made for a 1 in 25 line by the contractor of the Nílgiiri Railway.

CUDDALORE-PONDICHERY AND PERALAM-KARIKAL RAILWAY SURVEYS (METRE GAUGE).

54. The French Government have asked for permission to survey these lines, and sanction has been given to the survey being made.

CONNECTIONS WITH CEYLON (METRE GAUGE).

55. A proposal has been put forward by a private firm to obtain powers from both the Indian and Colonial Governments to construct a metre gauge line, 290 miles in length, from Madura to Colombo across Adam's bridge. There is another project put forward to construct a line from Madura to Pamban.

BEZWADA-MASULIPATAM RAILWAY (METRE GAUGE).

56. Proposals have been received from the Southern Mahratta Railway Company to construct a metre gauge branch line from Bezwada to Masulipatam, a distance of about 50 miles, and roughly estimated to cost Rs. 27,75,000, a mileage rate of Rs. 55,500. These proposals are now under consideration.

BURMA (STATE) RAILWAY MEIKTILA-MYINGYAN BRANCH (METRE GAUGE).

57. A survey of a branch line from Meiktila civil station to Myingyan was completed in 1892-93, as noted in the last report, and estimates were submitted showing a total cost, inclusive of rolling-stock, of Rs. 26,67,795 for a length of 55·6 miles—a mileage rate of Rs. 48,000. In addition to this, the short length of line between the present terminus of the Meiktila branch and the civil station, a distance of 2·11 miles, has also to be included, entailing a further charge of Rs. 1,19,191.

Myingyan is at present sufficiently well served by the river, and, though a line would very materially help the Chindwin trade, financial reasons prevent an early start being made.

In the meantime the estimates have been further scrutinised and a tabular statement compiled showing the comparative cost of alternative routes as under:—

- (1.) Meiktila-Myingyan (as above).
- (2.) Samon-Myingyan.
- (3.) Thedaw-Myingyan to join into (2) at about the 15th mile from Samon.

MOGAUNG-IRRAWADDY RAILWAY SURVEY (METRE GAUGE.)

58. It was decided in December 1893 to continue the extension survey from Mogaung, not to Myitkyina, but to some point on the Irrawaddy river near Akye. In January 1894 funds were sanctioned, and a survey party took the field about the middle of February. The length of this line will be about 28 miles.

SCHEDULE OF RAILWAYS RECENTLY SURVEYED OR LATELY PUT FORWARD FOR CONSIDERATION.

59. A list showing the lengths and estimated cost of the principal railways either recently surveyed, now under survey, or lately put forward for consideration will be found in Appendix H, page 240. The estimated cost of each project has been taken from such information as is at present available, but the amounts will require further investigation in every case before construction is undertaken.

CHAPTER IV.

COLLIERIES AND OIL WELLS.

KURHURBAREE AND SERAMPORE COLLIERIES.

These collieries are worked in connection with the East Indian Railway, and the entire supply of fuel for the railway is drawn from them.

The output for the year ended 31st December 1893 compared with that for the previous year is as under :—

					1892.	1893.
					Tons.	Tons.
Large coal	-	-	-	-	273,756	269,339
Small coal	-	-	-	-	47,094	59,809
Slack coal	-	-	-	-	44,822	54,439
Total	-	-	-	-	365,672	383,587

the increase in the proportion of slack being due to the large area of broken workings consisting of old pillars now being won.

The outturn of coke amounted to 23,316 tons.

The capital outlay on the collieries to the 31st March 1893 amounted, when adjusted, to Rs. 7,98,957, and the expenditure during the year 1893-94 to Rs. 59,761, the total outlay to the 31st March 1894 being Rs. 8,58,718.*

The total receipts at the sanctioned issue rates were Rs. 6,09,039, and the charges, including Sinking Fund, were Rs. 6,28,035, showing a loss of Rs. 18,996, which has been adjusted against the accounts concerned.

Much inconvenience was experienced from the short supply of waggons owing to scarcity of rolling stock.

The No. 2 Jubilee pit has been stopped at 650 feet, and is now the deepest pit in the colliery. The sinking of No. 1 Jubilee pit has been stopped pending consideration of the question of driving the galleries by compressed air plant, which would enable the second pit to be dispensed with. The Central pit has lately been commenced. Ponies have been successfully introduced to draw the tubs under ground.

The fire at Serampore has been kept under control.

The following table shows the number of accidents which occurred during the years 1892 and 1893, and the number of fatal and serious accidents compared with the output and the average number of men employed daily :—

	Number of accidents.			Per 1,000 tons large coal.		Percentage of Accident during the year on the average number of men employed daily.	
	Fatal.	Serious.	Slight.	Fatal.	Serious.	Fatal.	Serious.
Previous Year -	3	7	5	0.02	0.03	0.06	0.15
1893 -	2	2	2	0.01	0.01	0.04	0.04

EASTERN BENGAL (STATE) RAILWAY.

2. No further experiments were made during the year with coal from the Daling field (Dooars).

* This outlay is made up of the purchase money, Rs. 3,05,154, which represented half the original cost of buildings, plant, &c., paid to the East Indian Railway Company on valuation, and the capital expenditure incurred from the 1st January 1880

MAKUM COLLIERIES.

3. These collieries are worked by the Assam Railways and Trading Company.

The output during the year 1893-94 was 168,307 tons, against 154,874 tons in the previous year. The output for the year 1894-95 is estimated at 175,000 tons.

The capital outlay on the Makum collieries to the 31st March 1893 amounted to Rs. 24,77,373, and the expenditure during the year 1893-94 to Rs. 23,171, making a total outlay to the 31st March 1894 of Rs. 25,00,544.

There are three mines worked, *viz.*, the Ledo Valley, Upper Ledo, and Thikak, and the opening out of a fourth mine at Namdang is now being arranged for. Assam coal is soft, but its softness has not proved a drawback to its general use for all purposes, as it readily cakes when put on the fire. It is a first-class steaming and smithy coal, and is said to be equal to Welsh coal; it is largely used by the ocean and inland steamers, railways, jute mills, tea and other factories. Assam coal is now fully established in the market, and the demand for it is rapidly increasing.

PETROLEUM IN ASSAM.

4. The boring operations of the Assam Railways and Trading Company at Makum were continued during the year, and from its commencement seven bore holes have been drilled to various depths, of which six were abandoned. Bore hole No. 7 struck oil at a depth of 158 feet, and the yield is still continuing. The boring was carried to a depth of 474 feet, but no further supply was tapped. The operation of driving No. 8 bore hole was commenced.

At Digboi there are in all six bore holes, of depths varying from 650 to 1,120 feet, five of which are now yielding an average of 1,000 gallons of oil daily when pumped. The sixth was abandoned. The quantity of crude oil pumped during the year was 62,876 gallons. It is intended to enlarge the small refinery erected at Digboi at once. Kerosine and other oils are now being produced and being used on the Company's works, and it is expected that some of these will shortly be placed on the market. The crude oil is now being sold to the public for rough lubricating purposes and for the painting and preservation of timber and wood, for which it is specially adapted, and the demand for it is gradually increasing.

A large quantity of tools and machinery has been imported from England for the development of this undertaking, and the services of qualified oil experts from Canada and Galicia have been secured.

The capital outlay on the Company's petroleum works to the 31st March 1893 amounted to Rs. 2,87,129 and the outlay during the year 1893-94 to Rs. 1,37,556, making a total outlay to the 31st March 1894 of Rs. 4,24,685.

WARORA COLLIERY.

5. This colliery is worked by Government.

The total output during the year 1893-94 amounted to 120,789 tons, against 117,918 tons in the previous year, showing an increase of 2,871 tons.

The output consisted of—

	1892-3.	1893-4.
	Tons.	Tons.
Large coal	99,499	98,379
Small coal	18,419	22,410

The Great Indian Peninsula Railway was supplied with 59,997 tons of Warora coal during the year.

The capital outlay on the Warora colliery to the 31st March 1893, when adjusted, amounted to Rs. 15,64,344, and the approximate expenditure during the year 1893-94 to Rs. 1,06,630, making a total outlay to the 31st March 1894 of Rs. 16,70,974.

The average selling rate of coal for the year was approximately Rs. 4-9-4 per ton. The price paid by the Great Indian Peninsula Railway was Rs. 4-8-0 per ton.

The approximate receipts and expenditure during the year was estimated at the same amount, *viz.*, Rs. 5,60,000.

Three borings were put down during the year, one of which proved coal near the north fault, where it had hitherto been believed to be absent; of the others, one was unsuccessful, and the other will, it is hoped, strike coal at a depth of from 800 to 900 feet; and if this is the case the new shafts will probably be sunk there.

A new Stanley heading machine has been obtained, but, owing to insufficiency of air and the small area of the pipes, it has not worked successfully. These defects are being remedied.

A fault was struck in the workings to the south, and borings proved that the coal is thrown down about 80 feet. An engine has been fixed to work with compressed air, and arrangements are being made to push through this fault and work the coal beyond.

An endless haulage system with rope above tubs has been started to enable the coal to be won to the dip in No. 5 pit. The engine plane is 450 yards long, sloping 1 in 16, and the tubs travel at about $2\frac{1}{2}$ miles an hour. The attaching and detaching arrangements are automatic, and hitherto no accident has occurred.

A serious outbreak of fire took place in the dip cross cut district, No. 2 seam, where the brokeners were being worked, and extended to No. 3 seam, thus closing for a time a large district in both seams.

Some difficulty has been experienced during the year for want of pit room, and efforts are being made to increase the number of faces by winning coal to the dip in both seams. The presence of water and the inclination of the seams render this somewhat expensive.

During the year 4,549 tons of fire-clay were raised for the manufacture of fire-bricks, roofing, and flooring tiles.

The following table shows the number of accidents that have occurred during the years 1892-93 and 1893-94, and the number of fatal and serious accidents compared with the output and the average number of men employed daily :

	Number of Accidents.			Per 1,000 Tons Steam Coal.		Percentage of Accidents during the Year on the Average Number of Men Employed Daily.	
	Fatal.	Serious.	Slight.	Fatal.	Serious.	Fatal.	Serious.
Previous year	1	11	17	0·01	0·09	0·13	1·42
1893-94	1	*12	39	0·01	0·09	0·11	1·35

The fatal accident shown above took place on the 3rd September 1893, causing the loss of four lives, one man and three boys, and was due to a sudden escape of gas from some goaves which were on fire.

The coal in these mines being liable to spontaneous combustion, there is always danger from white and black damp.

MOHPÁNI COLLIERY.

6. This colliery is worked by the Nerbudda Coal and Iron Company.

The output during the year 1893 amounted to 13,172 tons against 16,272 tons in the previous year. Of the output during the year under review, 8,400 tons were from the south river workings, 3,961 tons from the old fire workings, and the balance 811 tons from the Helen pit.

The disposal of the year's output is shown below :

	Tons.
Sales	12,832
Colliery consumption	2,143
Stock during the year	2,409
Total	17,384
Less—Part of stock coal sold	4,212
Net output	13,172

* One of these was ultimately fatal.

The value of this output at the Mohpáni selling price amounted to Rs. 1,09,056.

All the engines and machinery on the surface works were in good working order.

The underground workings are in good order. All the coal was got from the brokens in the old fire workings, south river workings, and the Helen pit. No coal was got out of the Helen pit after July 1893, as, owing to the fire breaking through from No. 2 to No. 1 seam, it was found necessary to drown the workings out.

Two stone drifts from the surface have been completed during the year, one to facilitate the getting out of coal from the brokens in the old fire workings, and the other to get at a piece of barrier coal in the river working. Nine borings were put down in the new coalfield, of which four proved coal and two were unsuccessful. Of the other three, one was a trial in the lower measures and two are still in progress. No. 24 boring proved No. 1 seam at 40 feet below the surface, 20 feet thick, and a trial shaft 9 feet in diameter was sunk to a depth of 70 feet in order to prove the quality of the seams. It will afterwards be used for ventilation or other purposes. The walling of the shaft is nearly completed. No. 26 boring is the proposed site of another pit, which will be the deepest, and will probably be used for pumping and winding. All the seams were met with in this boring. Two small trial shafts or staples are also being sunk at Nos. 34 and 38 borings.

UMARIA COLLIERY.

7. This colliery is worked by Government.

The approximate output during the year 1893-94 amounted to 105,446* tons, against 95,946 tons in the previous year, or an increase of 9,500 tons, which is ascribed to the continued extension of the brokens (that is, the complete working out of the pillars) and to a better supply of labour.

Of the year's output, 70,370 tons of large coal and 24,426 tons of small coal were drawn from pit No. 3. The yield from pit No. 4 was 8,208 tons large and 2,442 tons small coal. During the year 1894-95 the colliery will be in a position to turn out 10,000 tons of coal per month.

The quantities* of the different descriptions of coal sold during the year were as follows :—

	Tons.
Large coal	86,932
Small coal	187
Washed nuts	12,946
Washed dust	534
Total	100,599

The quantities purchased by the several customers are detailed below :—

	Tons.
Great Indian Peninsula Railway	36,129
Indian Midland Railway	46,775
Bengal-Nágpur Railway	2,726
Mills and other customers	14,969

The capital outlay to the 31st March 1893 amounted, when adjusted, to Rs. 10,37,711. The capital transactions during the year 1893-94 resulted in a credit of Rs. 43,742, and the outlay to the 31st March 1894 was therefore Rs. 9,93,969.

The approximate receipts during 1893-94 amounted to Rs. 3,72,010 and the approximate expenditure to Rs. 3,40,000, showing a net gain of Rs. 32,010, equivalent to a return of 3·22 per cent. on the capital outlay, being the same as in the previous year.

The rate for large coal was reduced from Rs. 5-8-0 to Rs. 4-3-0 per ton in July 1893, and that for washed nuts from Rs. 3-0-0 to Rs. 2-4-0 per ton in September of the same year. The reduction in rates attracted a large number of customers during the latter part of the year under review.

Coal is at present only drawn from two pits, viz., Nos. 3 and 4, the depths of which are 117 and 235 feet respectively. The inclines and shafts are only used for the supply of water and ventilating purposes, and for the ingress and egress of the men.

* Includes approximate quantities for March 1894.

The main fault in the south-east main road of No. 4 pit was struck at a distance of 477 feet from the shaft. The fault was broached, and after a series of down-throw faults, the coal was found to be thrown down altogether about 60 feet below its original level. The coal through the fault continues to dip heavily, and an up-throw fault will probably be met with.

Three borings were put down during the year to enable the site for No. 5 pit to be fixed.

The following table shows the number of accidents that have occurred during the years 1892-93 and 1893-94 and the number of fatal and serious accidents compared with the output and the average number of men employed daily :

	Number of Accidents.			Per 1,000 Tons Steam Coal.		Percentage of Accidents during the Year on the Average Number of Men Employed Daily	
	Fatal.	Serious.	Slight.	Fatal.	Serious.	Fatal.	Serious.
Previous year - -	1	15	14	0.01	0.20	0.10	1.52
1893-94 - - -	1	9	7	0.01	0.11	0.12	1.12

COAL-FIELD AT TELANPALI NEAR THE EEB RIVER.

8. During the year an additional sum of Rs. 4,400 was sanctioned for sinking an experimental pit near No. 4 boring in the coal-fields in the vicinity of the Eeb river, but before the work was put in hand the grant was withdrawn.

SINGARENI COLLIERY.

9. This colliery is worked by the Hyderabad (Deccan) Company, Limited.

The total output during the year 1893 amounted to 157,421 tons against 149,601 tons in the previous year, an increase of 7,820 tons.

The output consisted of—

	Tons.
Steam coal - - - - -	113,343
Nut coal - - - - -	29,910
Dust and slack coal - - - - -	14,168

The new pits, referred to below, with No. 1 incline will be able to yield at least 2,000 tons a day ; at present the output is between 700 and 800 tons daily. The total output for 1894 will probably be about 300,000 tons, for which amount orders have already been received.

The principal sales during the year 1893 are briefly stated below :

	Tons.
Great Indian Peninsula Railway { Steam coal - - -	35,676
Unscreened coal - - -	10,552
The Nizam's Guaranteed State Railway. { Steam coal - - -	7,939
Unscreened coal - - -	4,522
Nut coal - - -	5,145
Southern Mahratta Railway - { Steam coal - - -	20,016
Unscreened coal - - -	102
Steam coal and nuts mixed	119
Contractor (chiefly for the Madras and South Indian railways). { Steam coal - - -	32,072
Unscreened coal - - -	3,410
Nut coal - - -	12,053
Steam and nut mixed	2,306
East Coast (State) Railway - { Unscreened coal - - -	2,089
Others - - - - - { Steam coal - - -	65
Nut coal - - -	32
Slack - - -	225
Total - - -	136,053

The Great Indian Peninsula, the Nizam's Guaranteed State, and the East Coast (State) railways are using unscreened coal, which has proved to be excellent locomotive fuel.

In order to enable the colliery to meet the demands of a rapidly extending market, a scheme embracing the sinking of four new pits, each 10 ft. 6 in. in diameter, has been completed. These pits have been sunk to the King seam to the deep of the inclines formerly worked, and have all been connected with the main line of the Nizam's Guaranteed State railway by a standard gauge siding $1\frac{3}{4}$ miles in length. Three of the new pits are equipped with separate plant, each having its own hauling, winding, banking, and screening gear, and the coal, on its arrival at bank is tipped direct into the standard gauge railway waggons. The fourth new pit, which has also been sunk to the King seam, is being equipped with winding gear, &c. In addition to these four new pits, it is proposed to continue working No. 1 incline.

The quality of the King seam coal, from which the years output was obtained, has been exceedingly satisfactory, and gives promise of still further improvement.

During the year underground operations have been somewhat interfered with by local dislocations, the two largest of which were 47 and 90 feet down-throws. These faults, together with others of less magnitude, were successfully dealt with.

The following table shows the number of accidents that have occurred during the years 1892 and 1893, and the number of fatal and serious accidents compared with the output and the average number of men employed daily:—

	Number of Accidents.			Per 1,000 Tons Steam Coal.		Percentage of Accidents During the Year on the Average Number of Men Employed Daily.	
	Fatal.	Serious.	Slight.	Fatal.	Serious.	Fatal.	Serious.
Previous year - -	5	6	24	0·04	0·05	0·23	0·27
1893 - - -	12	8	—	0·11	0·07	0·56	0·37

Of the 12 fatal accidents during the year 1893, seven occurred in the new pit sinkings, which were done by contract, three in the underground workings, and one on the surface.

DANDOT COLLIERY.

10. This colliery is worked in connection with the North Western (State) Railway.

The total output during the year 1893–94 was approximately 68,002 tons against 75,122* tons in the previous year, the decrease of 7,120 tons being attributable to the scarcity of labour.

The output consisted of—

	Tons.
Large coal - - - - -	47,250
Small coal - - - - -	2,780
Dust coal - - - - -	15,612
Mixed coal used for colliery purposes - - - - -	2,360
Total - - - - -	68,002

The sum originally sanctioned on block account was Rs. 5,00,000. The capital outlay to the 31st March 1893 amounted, when adjusted, to Rs. 4,55,622; and as the capital transactions of the year 1893–94 resulted in a credit of Rs. 2,019, the outlay on the 31st March 1894 was reduced to Rs. 4,53,603.

The receipts during the year amounted approximately to Rs. 5,24,014, and the expenditure to Rs. 5,42,238, showing a net loss of Rs. 18,224. This result is largely accounted for by the unusually good harvests, which rendered it difficult to obtain labour.

* Revised figures.

The net profits of the undertaking from the commencement of operations to the end of 1893-94 credited to the block account amounted to about Rs. 1,52,789, leaving Rs. 3,00,814 at the debit of the colliery.

In the outcrop mines the output could be considerably increased if sufficient labour were available, one mine alone being capable of turning out 300 tons of steam coal daily. All the mines are now worked on the petty contract system.

Fair progress was made in the Pidh mines, the work here also being retarded by insufficiency of labour.

Goaf roads have been proved to be quite unsuitable for the main mine or for any area where the strata are water-logged. Timber-drawing from the goaf is now being carried on in all directions.

The ventilation shaft was maintained in good order, and the rope-inclines worked satisfactorily during the year.

The sanitation of the colliery has been carefully looked after throughout the year.

The following table shows the number of accidents that have occurred during the years 1892-93 and 1893-94, and the number of fatal and serious accidents compared with the output, and the average number of men employed daily :—

	Number of Accidents.			Per 1,000 Tons Steam Coal.		Percentage of Accidents during the Year on the Average Number of Men employed Daily.	
	Fatal.	Serious.	Slight.	Fatal.	Serious.	Fatal.	Serious.
Previous year - - -	10	19	2	0·18	0·35	0·52	0·90
1893-94 - - -	2	21	8	0·04	0·44	0·10	0·10

BHAGANWALA COLLIERY.

11. This colliery is worked in connection with the North-Western (State) Railway. Sanction to its opening was given in July 1893.

The output to the 31st March 1894 amounted approximately to 2,564 tons, consisting of—

	Tons.
Large coal	1,880
Small coal -	120
Mixed coal used for colliery purposes - - -	564
Total - - - - -	2564

The receipts during the year amounted approximately to Rs. 22,597, and the expenditure to Rs. 30,485, showing a loss of Rs. 7,888. The amount sanctioned for expenditure on block account is Rs. 5,00,000. The approximate outlay during the year 1893-94 was Rs. 72,979, to which must be added Rs. 7,888, the loss on the year's working, making a total of Rs. 80,867 at debit of the block account on the 31st March 1894. Detailed estimates for the opening out of the colliery are under preparation.

A special report on these mines was submitted to Government in June 1893, and an officer of the Geological Department was deputed to investigate the Bhaganwala coal-fields, in order to ascertain the extent of the coal-working area beneath the Ara plateau. The result of the examination was favourable, and the quantity of coal which could be advantageously worked was estimated at one million tons. It is expected that the working will have a good floor and roof of sandstone, and, except where mines are carried to considerable depths, no great influx of water is feared.

A suitable site was found for a rope incline on the Rewat spur, and a standard gauge siding from Haranpur to Rewat, with the necessary tramway connections, was located.

One slight accident occurred during the period the colliery was worked in 1893-94.

KHOST COLLIERY.

12. This colliery is worked in connection with the North-Western (State) Railway.

The total output during the year amounted approximately to 19,180 tons, against 13,348 tons in the previous year, showing an increase of 5,832 tons. The output consisted of—

	1892-93.	1893-94.
	Tons.	Tons.
Large screened coal - - - - -	8,113	9,800
Small screened or nut coal - - - - -	—	401
Slack coal - - - - -	5,235	4,922
Dust coal - - - - -	—	4,057
Total - - - - -	13,348	19,180

The sum originally sanctioned on block account was Rs. 1,50,000. The capital outlay to the 31st March 1893 amounted, when adjusted, to Rs. 1,54,532, and the approximate expenditure during the year 1893-94 to Rs. 17,284, which includes the value of imprest stores, making a total outlay to the 31st March 1894 of Rs. 1,71,816.

The approximate receipts during the year amounted to Rs. 2,31,999, and the expenditure to Rs. 2,06,110, showing a net gain of Rs. 25,889, equivalent to a return of 15·07 per cent. on a capital outlay of Rs. 1,71,816. The profits realised on working, and credited to the block account from the commencement of operations to the end of 1893-94, amount to about Rs. 98,892, leaving a net debit of Rs. 72,924 against the block account at the end of the year.

There are now only five mainways in progress. These will all be worked in 1894, but from the nature of the workings the output from them can scarcely be expected to be as large as hitherto. The future of the colliery depends on the dip workings, and the prospects of these are not at present very favourable.

The largest output for the year was obtained from the main Khost mine and Killa Ali Khan.

The exploration dips driven from No. 3 adit were stopped by water in 1892. They were re-opened in December 1893, and a steam-pump got to work. They are, however, so badly fallen that they will have to be abandoned, and new dips started.

The Khost outcrop still supplies a little coal, but the condition of the hill above renders working here somewhat hazardous.

The miners' quarters and surroundings were maintained in good sanitary condition, and the general health of the workpeople was good, though the usual fever was fairly prevalent during August and September.

Ventilation, on the whole, has been well maintained. The mainways of Nos. 3 and 4 tunnels were joined, but the fan was not strong enough to ventilate both workings satisfactorily; hence, the furnace had to be kept going as well.

The following table shows the number of accidents that have occurred during the years 1892-93 and 1893-94, and the number of fatal and serious accidents compared with the output and the average number of men employed daily:—

	Number of Accidents.			Per 1,000 Tons Steam Coal.		Percentage of Accidents during the Year on the Average number of Men employed Daily.	
	Fatal.	Serious.	Slight.	Fatal.	Serious.	Fatal.	Serious.
Previous year	2	1	—	0·24	0·12	0·001	0·001
1893-94	2	4	2	0·20	0·40	0·001	0·003

SHARIGH COLLIERY.

13. This colliery is worked in connection with the North-Western (State) Railway.

Regular working at Sharigh was started in April 1893, but the mines were closed pending the settlement of the boundary and other questions, and were not re-opened till October.

The total output to the 31st March 1894 amounted approximately to 2,361 tons, the coal being obtained chiefly from the driving of preliminary works.

The output consisted of—

	Tons.
Steam coal	1,550
Screened coal	177
Slack coal	456
Dust coal	178
Total	2,361

The approximate receipts during 1893-94 amounted to Rs. 31,152, and the expenditure to Rs. 34,637, thus showing a net loss of Rs. 3,485. The sum sanctioned for expenditure on block account is Rs. 25,000. The approximate capital outlay during 1893-94 was Rs. 10,286, to which must be added Rs. 3,485, the loss on the year's working, making a total of Rs. 13,771 at debit of the block account on the 31st March 1894.

The workings consist at present of an outcrop working and five larger workings. The outcrop working is merely a mainway driven in a seam in which the extent of coal above water-level is small. When the extremity of this small portion has been reached, the coal recovered by the mainway will be worked back. The five other workings are in the main seam, two of the adits passing through two or three seams. The quality of the coal varies considerably in the different workings, being in some cases clean and of good quality, in others split up by partings of sandstone.

All the workings are at present supplied with air by natural ventilation.

The prospects of the colliery are at present fairly good.

The following table shows the number of accidents that have occurred during the year 1893-94, and the number of fatal and serious accidents compared with the output and the average number of men employed daily :—

	Number of Accidents.			Per 1,000 Tons Steam Coal.		Percentage of Accidents during the Year on the Average Number of Men Employed Daily.	
	Fatal.	Serious.	Slight.	Fatal.	Serious.	Fatal.	Serious.
1893-94	2	—	—	1·30	—	0·14	—

QUETTA COAL-FIELDS.

14. Coal has been found to exist along the Sor range (the second range of hills to the east of the Quetta-Darwaza valley) for a length of 30 miles. The coal on the northern portion of the range is of very poor quality and friable, but it seems to improve on the south. Considerable quantities of dust coal from the northern portion of the range, some 15 miles from Quetta, are brought into Quetta in the winter, and are made into briquettes for domestic use. The coal from the southern portion is not brought into Quetta, as the cost of carriage and the difficulty of getting labour render the working of the coal unprofitable. 14,330 maunds of this coal, however, were supplied during the year to the Mushkaf-Bolán Railway for locomotive use, and there is some hope that when the Mushkaf-Bolán Railway is opened, it may be found profitable to work this portion of the field on a larger scale.

BALUCHISTAN PETROLEUM OPERATIONS.

15. The petroleum borings at Khattan, which had been given up as Government workings, were handed over in July 1893 to a private syndicate under an agreement that they might work there for one year, free of royalty, as an experiment, and that at the end of the year, if they wished to continue operations, a further agreement would be made. These operations have been on a very small scale, being at present confined to getting out such quantities from the old borings as could be readily sold locally.

The Government plant at Khattan was transferred to Sukkur during the year, where experimental borings have been started under an officer of the Geological Survey. A boring was commenced on the 19th December 1893, which by the 31st March 1894 had reached a depth of 493 feet, and is still being continued. No traces of gas or oil have yet been met with.

TOTAL COAL PRODUCTION.

16. The following statement shows the quantity in tons of coal produced in India during the last 14 years.

STATEMENT showing the QUANTITY in TONS of COAL produced in INDIA during the last Fourteen Years.

Provinces.	1880.	1881.	1882.	1883.	1884.	1885.	1886.	1887.	1888.	1889.	1890.	1891.	1892.	1893.
Bengal - - -	988,565	930,203	1,038,872	1,200,957	1,257,392	1,123,700	1,186,802	1,319,090	1,380,594	1,541,356	1,626,245	1,747,122	1,920,050	1,870,720
Punjab - - -	—	—	—	—	—	—	—	7,523	11,249	22,835	40,877	60,714	66,352	77,294
Central Provinces	51,228	67,527	91,370	115,019	121,833	119,116	117,237	128,981	157,768	144,465	137,022	141,736	132,005	135,118
Assam - - -	—	—	—	—	16,493	43,707	70,859	89,302	101,523	116,676	145,708	154,208	164,050	164,420
Central India -	—	—	—	—	2,100	7,698	13,539	15,497	41,580	52,956	77,842	69,741	88,623	94,348
Nizam's territory	—	—	—	—	—	—	—	3,259	13,382	59,646	125,486	144,668	149,601	157,421
Madras - - -	—	—	—	—	—	—	—	—	—	—	—	20	61	502
Baluchistan -	—	—	—	—	—	—	—	411	2,802	8,238	15,541	10,368	13,284	20,094
Burma - - -	—	—	—	—	—	—	—	—	—	—	—	—	3,870	9,938
Total - - -	1,019,793	997,730	1,130,242	1,315,976	1,397,818	1,294,221	1,388,487	1,564,063	1,708,908	1,946,172	2,168,621	2,328,577	2,537,696	2,529,855

CHAPTER V.

STORES AND ROLLING STOCK (CAPITAL).

STORES.

Expenditure in England.—The total expenditure on State railway stores contracted for in England, through the agency of the India Office during the calendar year 1893, was—

	£
A.—Iron bridgework	109,906
B.—Engineers' plant	34,172
C.—Workshop machinery	6,142
D.—Permanent way	324,336
E.—Locomotive and rolling stock	185,093
F.—Station materials and fencing	26,199
G.—Tools and stores	91,371
Total	777,219

2. *Expenditure in India.*—The stores purchased locally by the Port Storekeeper, Calcutta, and the Marine Storekeeper, Bombay, amounted to Rs. 2,28,741 and Rs. 36,493 respectively.

3. *Cost of Establishment at Ports.*—The cost of the establishments maintained at Calcutta and Bombay was—

	Rs.
Calcutta	19,446
Bombay	1,893
Total	21,339

4. *Ships employed.*—The number of ships employed in bringing State railway stores, including stores procured for Native State lines during the calendar year 1893, was—

	No.	Tons.	Approximate Value of Stores received at each Port.
			Rs.
To Bombay	49	6,519	6,21,060
„ Calcutta	130	39,059	49,82,238
„ Karachi	60	60,352	61,55,638
„ Rangoon	25	11,428	12,70,494
„ Cocanada	*11	7,309	10,05,511
„ Vizagapatam	*25	22,331	27,22,214
„ Gopalpore	*1	457	42,389
Total	301	147,455	1,67,99,544

* According to the above, 37 vessels would appear to have arrived at the ports of Cocanada, Vizagapatam, and Gopalpore, whereas the actual number is only 28; the difference is due to the cargo of 9 vessels having been discharged in part at these three ports.

5. *Credits to Civil Department on account of one per cent. insurance*—During the years 1892-93 and 1893-94, Rs. 1,55,646 and Rs. 1,53,161 respectively were credited to the Civil Department on account of one per cent. insurance. Nothing has been charged off in the home accounts to the insurance fund for stores lost at sea during the above years.

The Secretary of State has recently sanctioned the reduction of the insurance charge from one to one-half per cent. on all stores charged to Imperial funds.

6. The value of imported stores held in reserve at Calcutta on the 1st January 1893 was Rx. 4,773 and the balance at the close of 1893 was Rx. 4,716, shewing a decrease of Rx. 57.

CAPITAL LOCKED UP IN STORES.

7. Statement No. 6 B, on pages 75 and 76, shows the stores balances on the standard and metre gauge railways on the 31st December 1893 as compared with the previous year.

ROLLING-STOCK.

8. Statement No., 6 on pages 70 to 73, gives details of the number of locomotives and vehicles on the standard and metre gauge railways at the end of 1892 and 1893; also the total capital cost of the stock.

ROLLING-STOCK ADAPTED FOR MILITARY PURPOSES.

9. The statement on page 69 shows the progress that has been made up to date in fitting second, intermediate, and third class carriages on Indian railways with hooks or racks for slinging soldiers' rifles.

The erection of standard gauge stock fitted for military requirements on the Bengal-Nágpur railway is now completed, and the following quantity of stock was available on the 31st December 1893:—

23 ambulance carriages.	
1,191 covered goods waggons suitable for carrying horses and ponies.	
500 medium-sided waggons	} suitable for carrying guns.
20 low-sided waggons	
75 ballast waggons	
10 horse-boxes.	

The standard gauge stock adapted for military purposes on the Indian Midland Railway on the 31st December 1893 comprised:—

22 third class ambulance carriages.
750 covered waggons to carry horses.
208 open waggons to carry guns.

The total standard gauge stock on the North Western (State) Railway adapted for military and ambulance purposes on 31st December 1893 was as under:

26 composites (first and second class.)
27 intermediate class composites.
23 second class carriages.
493 third class carriages, ordinary.
65 third class carriages, bogie.
124 horse-boxes.
4,130 covered goods waggons (including 427 bogies.)
1,686 low-sided waggons (including 198 bogies.)
148 high-sided trucks.
245 rail trucks.

6,967

On the Oudh and Rohilkhand (State) Railway, no additions to stock adapted for military purposes have been made during the calendar year.

The numbers of standard and metre gauge vehicles adapted for military purposes on the Eastern Bengal (State) Railway on the 31st December 1893 were :

Standard Gauge (Eastern Section)—

- 16 intermediate class, fitted for ambulance purposes.
- 10 horse-boxes.
- 9 wooden covered goods waggons.
- *782 iron covered goods.
- 132 low-sided waggons.

Metre Gauge (Northern and Behar Section)—

- 8 horse-boxes.
- 570 covered goods waggons (wooden) not fitted with breast bars.
- 27 low-sided waggons (inclusive of two powder vans.)

Metre Gauge (Dacca Section)—

- 2 horse boxes.
- 126 covered waggons (wooden) not fitted with breast bars.

Of the stock on the East Coast (State) Railway (standard gauge), 5 iron-covered goods waggons are adapted for the carriage of horses and 300 low-sided ballast waggons are fitted for the carriage of artillery guns.

On the Great Indian Peninsula Railway (standard gauge), no alterations were made during the year to the coaching vehicles fitted for military purposes or with rifle-racks, but three covered waggons were added during the year for carrying horses. The number of vehicles now fitted for military purposes is as under :

- 3,112 open goods suited for carrying guns.
- 50 open bogie waggons suited for carrying heavy guns.
- 1,505 covered goods waggons for carrying horses.
- 29 coaching vehicles fitted with ambulance appliances.
- 93 horse-boxes capable of carrying each three horses.

On the Bombay, Baroda and Central India Railway (standard gauge), there are at present 14 third-class ambulance carriages; one is at present under construction to replace one which was sold, which will make the number 15 carriages. The waggons fitted for military purposes on this railway are as under:

- 1,549 covered goods waggons, Z pattern } suitable for carrying horses or men.
- 105 covered goods waggons, Y pattern }
- 1,487 open waggons not specially built for military purposes, but capable of carrying most military stores.

On the Madras Railway, the number of standard gauge goods vehicles adapted for military purposes are as follows :

- 993 covered goods waggons } fitted to carry horses.
- 50 cattle waggons }
- 1,578 open waggons suitable for carriage of artillery.

On the Rohilkund and Kumaon Railway, the total metre gauge stock adapted for military purposes on 31st December 1893 was as under :

- 5 horse-boxes to carry 4 horses or 8 small mules.
- 3 covered goods waggons to carry 4 horses or 8 small mules.

The following metre gauge vehicles are adapted for military purposes on the Southern Mahratta Railway :

Coaching—

Composite bogie, 1st and 2nd class	-	-	-	12
Composite ordinary, 1st and 2nd class	-	-	-	20
Second-class carriages	-	-	-	36
Third-class bogie carriages	-	-	-	42
Third-class ordinary carriages	-	-	-	174
Brake-vans	-	-	-	17
Ambulance third-class carriages	-	-	-	3
Horse-boxes	-	-	-	36

* The iron-covered goods waggons are suitable for military purposes, but out of them 242 waggons only fitted with breast bars are at present adapted for carriage of horses.

Goods—

Medium-sized waggons	-	-	-	-	111
Low-sided waggons, iron	-	-	-	-	762
Low-sided, 6-wheeled	-	-	-	-	2
Low-sided with wooden sides	-	-	-	-	33
Low-sided, military type	-	-	-	-	53
Covered goods waggons for carrying horses	-	-	-	-	100

On the South Indian Railway (metre gauge), 15 third-class carriages are adapted for ambulance purposes, and the following vehicles are also suitable for military purposes :

267 covered goods waggons adapted for carrying horses.	} suitable for the carriage of
813 open medium or high-sided waggons	
504 ballast or low-sided waggons	
	artillery.

On the Burma State Railway, the following metre gauge stock is adapted for military purposes :

270 ballast waggons	} with drop ends for carrying artillery.
20 open bolster waggons	
50 covered goods waggons, 25 feet long (bogie)	} suitable for carrying
23 covered goods waggons, 18 feet long.	
50 covered goods waggons, 15 feet 6 inches long	
	horses and ponies.

Breast bars are kept ready for these when required.

25 covered goods waggons, 25 feet long (bogie)	} suitable for carrying
150 covered goods waggons, 15 feet long (4-wheeled)	
	horses, but not fitted
	with breast bars.

Sixty-nine third-class carriages with end doors have side doors for ambulance doolies, but no appliances for suspending doolies.

BRAKES.

10. On the East Indian Railway, the work of fitting locomotives and carriage stock with the automatic vacuum-brake, which was sanctioned in 1892, was continued. Out of a total of 116 engines and 1,559 vehicles to be ultimately so fitted, 35 engines and 188 coaches have been completed, and 141 coaches have been fitted with the pipes, but without the brake, to enable them to run on vacuum-brake trains. The fitting of the remaining engines and coaching stock is in hand. The chord and loop mails are now running with the vacuum-brake.

On the Indian Midland Railway sanction was received during the year for fitting with the automatic vacuum-brake for use on mail trains, 30 engines, 89 carriages, and 15 brake-vans.

On the North-Western (State) Railway, the fitting of vacuum automatic brake gear to rolling-stock was in progress during the year. The total stock fitted to end of December 1893 was.

Engines	-	-	-	-	293
Coaching vehicles	-	-	-	-	1,238
Goods vehicles	-	-	-	-	310

Of these, 75 coaching and 32 goods vehicles were fitted with pipes only.

On the Eastern Bengal (State) Railway, the work of fitting engines and vehicles with the automatic vacuum-brake gear was continued during the year. Up to 31st December 1893, 15 engines and 104 vehicles were fitted with the brake, and 13 carriages were supplied with train piping on the standard gauge length of the railway. On the Northern section (metre gauge) 2 engines out of 12 ordered, and 22 carriages out of 100 ordered, have been fitted with the brake up to date, and 2 carriages have been supplied with the train piping.

The rolling-stock on the Great Indian Peninsula Railway fitted with the automatic vacuum brake is as follows :—

Locomotives	-	-	-	-	86
Vehicles	-	-	-	-	260

The whole of the coaching stock of Bombay, Baroda, and Central India Railway Company has for many years been fitted with the simple vacuum-brake; the work of converting this into an automatic vacuum-brake is in progress, and will be finished by 30th June 1894.

On the Madras Railway, six carriages in use on the through mail service between Madras and Bombay were fitted during the year with the automatic vacuum-brake complete, and 7 more with pipe connections only. It is proposed to fit a certain proportion of the stock of the line annually with this system of brakes, and it is hoped that sufficient vehicles for the mail service of the north-west line will very shortly be so fitted.

A few of the passenger vehicles on the Nizam's Guaranteed State Railway (standard gauge) have been fitted with automatic vacuum-brake pipe and connections.

No automatic vacuum-brakes have been fitted to stock running on the Southern Mahratta Railway) but the following have been fitted with Westinghouse brakes :—

Locomotives	-	-	-	-	3
Coaching vehicles	-	-	-	-	19

The automatic vacuum-brake was introduced during the year on the South Indian Railway, and is fitted to 20 engines and 100 bogie carriages, and 73 more sets have been indented for. The brake is not yet in use, as the engines infringe standard dimensions, and are not running regularly with the mail trains.

On the Burma (State) Railway, 8 third-class coaches and 53 goods vehicles have been provided with ordinary hand-brake.

On the Dibru-Sadiya Railway, the rolling-stock is fitted with screw-brakes.

COUPLINGS.

11. The entire goods and coaching stock on the Bengal-Nágpur Railway is fitted with couplings at both ends.

Up to 31st December 1893, 9,291 vehicles on the North-Western (State) Railway were fitted with screw couplings at both ends, leaving 2,581 vehicles still to be fitted.

On the Oudh and Rohilkhand (State) Railway, the entire coaching and goods stock is fitted with couplings at both ends.

The whole of the stock on the East Coast (State) Railway is fitted with couplings at both ends.

The whole of the coaching stock of the Great Indian Peninsula Railway is fitted with screw couplings at both ends. The fitting of 30 per cent. of the waggon stock with screw couplings is in progress, and during the year 1893 1,258 couplings were fitted.

The whole of the coaching stock of the Bombay, Baroda and Central India Railway has screw couplings at both ends. The goods stock is being fitted with screw couplings one to each vehicle, and over 3,000 vehicles have already been so fitted. The fitting of the remaining stock will probably be completed by the 30th June 1894.

On the Madras Railway, 861 vehicles were fitted during the year with two screw couplings, making a total up to date of 1,435 vehicles. The total number of vehicles furnished with two centre chains is 557, of which 263 were fitted during the year.

None of the rolling-stock of the Southern Mahratta Railway is fitted with double couplings.

The stock of the South Indian Railway is being rapidly provided with Jones' flexible buffers, and the following vehicles are now running with them :

Coaching vehicles	-	-	-	-	570
Goods vehicles	-	-	-	-	1,428

The whole of the rolling-stock of the Burma (State) Railway is now fitted with Jones' patent screw couplings and flexible buffers. All but 7 engines have been fitted with a special duplex coupling (male and female) for coupling up after turning without any change of hook being necessary.

Centre buffer and hook couplings have been fitted to the rolling-stock of the Dibru-Sadiya Railway. The coaching vehicles of this line have been fitted with tight couplings.

The fitting of side chains to the whole of the coaching and goods stock of the Bhavnagar-Gondal-Junagar Porbandar Railway was completed during the year.

On the Gaekwar's Dabhoi Railway, 89 vehicles have been fitted at one end with Luard and Lindsley's patent screw couplings.

RETIRING ACCOMMODATION FOR FEMALES.

12. Statement No. 6 A., on page 74, furnishes details of the number of carriages that have been fitted with retiring accommodation for females in order to comply with the requirements of section 64 of the Indian Railways Act, IX. of 1890.

LIGHTING OF RAILWAY CARRIAGES WITH GAS ON PINTSCH'S SYSTEM.

On the East Indian Railway, 56 out of 180 vehicles have been fitted with gas lamps on Pintsch's system.

On the Indian Midland Railway sanction has been received for lighting 225 carriages with gas on Pintsch's system.

A few carriages on the Great Indian Peninsula Railway have been fitted with the necessary apparatus for lighting with gas on Pintsch's system.

Sanction was given during the year to the substitution in the carriages of the Bombay, Baroda and Central India Railway of Pintsch's gas system for the present system of oil lighting.

On the Madras Railway no progress was made in the introduction of gas lighting during the year. The estimate for the gas plant and fittings was, however, sanctioned at the close of the year 1893, and the material necessary for the introduction of gas lighting will shortly be received from England.

The Government of India have ordered that arrangements should be made to introduce the compressed gas system on State lines of the standard gauge as soon as funds can be made available for the purpose.

COMMITTEE OF LOCOMOTIVE AND CARRIAGE AND WAGGON SUPERINTENDENTS.

East Indian.	Rohilkund and Kumaon.
Bengal-Nagpur.	Southern Mahratta.
Indian Midland.	South Indian.
North Western (State)	Assam-Bengal.
Oudh and Rohilkhand	Burma (State).
(State).	Dibru-Sadiya.
Eastern Bengal (State).	Kolhapur.
East Coast (State).	Mysore.
Great Indian Peninsula.	Jodhpore-Bickaneer.
Bombay, Baroda and	Bhavnagar-Gondal-
Central India.	Junagarh-Porbandar.
Madras.	Jorhat.
Nizam's Guaranteed	Darjeeling-Himalayan.
State.	Cherra-Companyganj.
Bengal and North-	
Western.	

14. The amended draft rules for dealing with such expenditure as may be incurred in connection with the work of the Committee of Locomotive and Carriage and Waggon Superintendents in India, having been accepted by the Administrations of the railways noted on the margin, were finally sanctioned by the Government of India.

COVERED GOODS AND OPEN-SIDED WAGGONS SUPERINTENDENTS.

15. The Government of India have approved of the general adoption of the type proposed by the Committee of Locomotive and Carriage and Waggon Superintendents in India for military waggons of the standard gauge.

CLEANING OF HORSE-BOXES AND CATTLE TRUCKS.

The question of the proper cleansing of horse-boxes and cattle trucks with a view to prevent the spread of contagious diseases was considered by the Railway Conference, and it was decided that rules should be framed on the lines of those in force in England with such modification as might be necessary to adapt them to Indian requirements.

INDIAN RAILWAYS.

STATEMENT showing NUMBER of CARRIAGES fitted with HOOKS or RACKS, as the case may be for SOLDIER'S RIFLES.

RAILWAY.	Description of Carriage, Class.						Hooks.						Racks.						Percentage on the Total Stock of each Class.						Remarks.
	Com- posite, 1st and 2nd.	Com- posite, 1st and 3rd.	2nd.	Inter- mediate.	Com- posite, inter- mediate and 3rd.	3rd.	Com- posite, 1st and 2nd.	Com- posite, 1st and 3rd.	2nd.	Inter- mediate.	Com- posite, inter- mediate and 3rd.	3rd.	Com- posite, 1st and 2nd.	Com- posite, 1st and 3rd.	2nd.	Inter- mediate.	Com- posite, inter- mediate and 3rd.	3rd.							
STANDARD GAUGE.																									
1. East Indian	49	—	94	70	14	680	—	—	—	—	—	19	—	—	—	—	—	—	—	2 ⁸⁰	(a) 2nd class compart- ments only fitted with racks.				
2. Bengal Nagpur	25	4	15	8	12	181	—	—	—	—	—	—	(a) 23	—	—	—	—	—	—	82 ³²					
3. Indian Midland	—	—	17	—	—	220	—	—	—	—	—	—	—	—	—	—	—	—	—	80 ⁹¹	(b) 3rd class compart- ments only fitted with racks.				
4. North-Western (State)	96	(c) 10	82	78	46	779	—	—	—	—	—	—	(a) 26	—	—	—	—	—	—	64 ¹⁸					
5. Oudh and Rohilkhand (State)	—	—	—	20	—	278	—	—	—	—	—	—	—	—	—	—	—	—	—	100 ⁰⁰	(c) Composite, 1st, 2nd, and 3rd.				
6. Eastern Bengal (State)— Central, southern, and eastern sections.	41	—	12	52	16	139	—	—	7	—	—	1	—	—	—	—	—	—	—	51 ²⁶	(d) Composite, 2nd and 3rd.				
7. East Coast	4	—	3	—	—	51	—	—	—	—	—	—	—	—	—	—	—	—	—	45 ⁰⁹					
8. Great Indian Peninsula	—	—	150	—	—	561	—	—	—	—	—	—	—	—	54	—	—	—	—	11 ⁷⁶					
9. Bombay, Baroda, and Central India.	22	—	41	22	—	237	—	—	—	—	—	—	—	—	22	—	—	—	—	39 ²⁴					
10. Madras	—	—	69	—	—	359	—	—	69	—	—	286	—	—	—	—	—	—	—	82 ⁴⁵					
11. The Nizam's Guaranteed State.	No report received.																								
METRE GAUGE.																									
12. Bengal and North-Western, including Tirhoot section.	28	—	10	—	22	221	—	—	—	—	—	16	—	—	—	—	—	—	—	43 ⁰⁰					
13. Rohilkhand and Kumaon (including Lucknow- Bareilly section).	11	—	3	3	9	73	—	—	—	—	—	—	—	—	3	—	—	—	—	22 ²²					
14. Rajputana-Malwa	46	—	96	37	13	766	—	—	—	—	—	—	—	—	2	8	—	—	—	53 ⁸⁵					
15. Southern Mahratta, in- cluding Mysore section.	62	—	42	—	—	482	—	—	—	—	—	—	34	—	86	—	—	—	—	21 ⁶²					
16. South Indian	—	10	—	—	—	540	—	—	—	—	—	—	—	3	—	—	—	—	—	83 ⁷¹					
17. Eastern Bengal (State)— Northern Behar and Dacca sections.	29	—	14	38	1	179	—	—	—	—	—	88	—	—	12	26	—	—	—	85 ⁷¹					
18. Burma (State) g/ b/	3	—	—	2	—	19	—	—	—	—	—	—	—	—	—	—	—	—	—	—	(d)				
19. Bhavnagar - Gondal - Jun- agarh-Portabandar.	11	(d) 5	54	—	—	358	—	—	—	—	—	—	11	(d) 5	12	—	—	—	—	100 ⁰⁰					
	—	—	—	—	—	128	—	—	—	—	—	6	—	—	—	—	—	—	—	—	—				

NUMBER and VALUE of LOCOMOTIVES and VEHICLES on the STANDARD and METRE GAUGE

Serial Number.	Railway.	Open Mileage.		Locomotives.		Value of Locomotives.		Coaching Vehicles.		Goods Vehicles.	
		On the 31st December 1892.	On the 31st December 1893	Number on the 31st December 1892.	Number on the 31st December 1893.	At the end of 1892.	At the end of 1893.	Number on the 31st December 1892.	Number on the 31st December 1893.	Number on the 31st December 1892.	Number on the 31st December 1893.
	STANDARD GAUGE.										
	STATE LINES WORKED BY COMPANIES.					Rs.	Rs.				
I.	East Indian (a) - - -	1,793'90	1,794'36	562	576	1,78,59,746	1,85,84,328	1,218	1,218	8,936	8,936
I.	Bengal-Nágpur - - -	831'58	862'33	97	103	46,94,989	46,69,711	1,253	292	12,711	3,404
III.	Indian Midland (c) - - -	734'46	734'46	105	109	31,34,101	32,93,067	365	351	2,140	2,140
	Total - - -	3,359'94	3,391'15	764	764	2,56,88,836	2,56,88,836	1,886	1,861	13,787	14,480
	STATE LINES WORKED BY THE STATE.										
IX.	North-Western (State) (e) - -	2,610'15	2,608'26	590	586	1,89,81,565	1,88,58,864	1,508	1,529	10,051	10,063
XI.	Oudh and Rohilkhand (State) -	692'55	741'11	156	157	37,59,789	37,94,277	459	472	4,371	4,360
XII.	Eastern Bengal (State) (h) - -	373'50	373'76	97	97	(i)	(i)	439	439	1,862	2,068
XIV.	Calcutta Port Commissioners - -	6'22	6'22	6	6	97,781	97,781	—	—	150	172
XV.	East Coast (State) (j) - - -	—	174'54	—	29	—	83,648	—	37	—	621
	Total - - -	3,682'42	3,903'89	849	875	2,28,39,135	2,28,34,570	2,406	2,477	16,434	17,284
	LINE WORKED BY GUARANTEED COMPANIES.										
XVIII.	Great Indian Peninsula (k) - -	1,490'08	1,490'08	605	605	(i)	(i)	1,043	1,045	7,953	7,983
XIX.	Bombay, Baroda, and Central India (m)	474'25	499'25	127	134	47,55,106	50,47,601	427	427	3,564	3,642
XX.	Madras - - -	839'23	839'22	153	164	52,51,602	54,21,213	629	626	2,874	2,862
	Total - - -	2,803'56	2,828'55	885	903	99,86,708	1,04,68,814	2,099	2,098	14,391	14,447
	LINE OWNED BY NATIVE STATE AND WORKED BY COMPANY.										
XXVI.	The Nizam's Guaranteed State (p) -	350'67	444'81	50	50	19,34,914	19,39,914	109	111	733	733
	Total - - -	350'67	444'81	50	50	19,34,914	19,39,914	109	111	733	733
	Total Standard Gauge -	10,196'59	10,568'40	2,548	2,616	6,04,49,593	6,17,90,404	6,430	6,547	45,365	46,944

(a) Including the Delhi-Umballa-Kalka, and Tarkessur Railways.

(b) Fitted with vacuum automatic brakes.

(c) Including the Bhopal-Itarsi Railway.

(d) Fitted with simple vacuum brakes.

(e) Including branch lines worked, but excluding lines temporarily closed or constructed, but not opened for traffic.

(f) Of this Rs. 7,056 for the year 1892 and Rs. 7,160 for 1893 represent cost of transporting rolling stock required for working the Hyderabad-Umarkot Railway which has not been included in any of the previous columns.

(g) 15 fitted with vacuum automatic, and 20 with Westinghouse brakes.

(h) Including the Bengal Central Railway.

No. 6.

RAILWAYS, and the ROLLING STOCK fitted with Continuous and Continuous Automatic Brakes.

Cranes.		Brake-vans.		Total Number of Vehicles.		Value of Vehicles.		Total Value of Rolling Stock.		Rolling Stock fitted with Continuous and Continuous Automatic Brakes.		Serial Number.
Number on the 31st December 1892.	Number on the 31st December 1893.	Number on the 31st December 1892.	Number on the 31st December 1893.	Number on the 31st December 1892.	Number on the 31st December 1893.	At the end of 1892.	At the end of 1893.	At the end of 1892.	At the end of 1893.	Number of		
										Locomotives.	Vehicles.	
20	20	341	341	10,515	10,515	Rs. (b) 2,21,69,010	Rs. 2,24,15,561	Rs. 4,00,23,756	Rs. 4,09,99,889	(b) 42	(b) 329	I.
8	8	84	108	3,056	3,812	97,40,246	1,15,54,416	1,44,35,235	1,62,24,127	—	—	II.
8	8	86	112	2,599	2,611	82,27,030	84,11,393	1,13,61,131	1,17,04,460	(d) 102	—	III.
36	36	511	561	16,170	16,938	4,01,36,286	4,23,81,370	6,58,25,122	6,89,28,476	144	329	
41	44	513	511	12,113	12,147	3,67,27,501	3,68,39,626	(f) 5,57,16,122	(f) 5,57,05,670	‡ (b) 293	(b) 1,548	IX.
13	13	120	120	4,963	4,965	1,07,79,339	1,08,04,792	1,45,39,123	1,45,99,069	(g) 35	(b) 123	XI.
4	4	63	63	2,368	2,574	(i)	(e)	89,13,513	90,92,026	(b) 15	(b) 104	XII.
—	—	—	—	150	172	2,80,376	2,80,376	3,78,157	3,78,157	—	—	XIV.
—	2	—	16	—	676	—	2,57,993	—	3,41,641	—	—	XV.
53	63	696	710	19,594	20,534	4,77,87,216	4,81,82,787	7,95,46,920	8,01,16,563	343	1,775	
46	47	590	590	9,632	9,635	(z)	(i)	4,33,42,787	4,34,62,286	(d) 302	(b) 280	XVIII.
3	3	84	90	4,078	4,162	99,05,242	1,02,95,325	1,46,60,348	1,53,42,926	(n) 93	(c) 631	XIX.
6	6	163	170	3,672	3,654	96,63,525	97,02,847	1,48,95,127	1,41,24,060	—	(b) 13	XX.
55	56	837	850	17,382	17,451	1,95,68,767	1,99,98,172	7,28,98,262	7,39,29,272	395	904	
2	2	41	41	885	887	19,54,110	19,44,509	38,89,024	38,84,423	—	—	XXVI.
2	2	41	41	885	887	19,54,110	19,44,509	38,89,024	38,84,423	—	—	
151	157	2,085	2,162	54,031	55,810	10,94,46,379	11,25,06,838	22,21,59,328	22,68,58,734	882	3,009	

(i) Value of engines and vehicles not recorded separately.

(j) Opened for traffic on the 15th July 1893.

(k) Including the Wardha Coal Dhond-Maumad, Khamgaon, and Amravati Railways.

(l) Including the Wardha Coal Dhond-Maumad, Khamgaon, and Amravati Railways.

(m) Including the Gaskwar's Petlad and Godhra-Batlam Railway.

(n) Including the Gaskwar's Petlad and Godhra-Batlam Railway.

(o) Including the Gaskwar's Petlad and Godhra-Batlam Railway.

(p) Including the Bezawada extension railway and the Bezawada Godavari section of the East Coast Railway.

(q) Including the Bezawada extension railway and the Bezawada Godavari section of the East Coast Railway.

(r) From Statement No. 25, pages 126 to 128.

† Revised figures.

NUMBER and VALUE of LOCOMOTIVES and VEHICLES on the STANDARD and METRE GAUGE RAILWAYS

Serial Number.	Railway.	Open Mileage.		Locomotives.		Value of Locomotives.		Coaching Vehicles.		Goods Vehicles.	
		On the 31st December 1892.	On the 31st December 1893.*	Number on the 31st December 1892.	Number on the 31st December 1893.	At the end of 1892.	At the end of 1893.	Number on the 31st December 1892.	Number on the 31st December 1893.	Number on the 31st December 1892.	Number on the 31st December 1893.
XXXIII.	METRE GAUGE.										
	STATE LINES WORKED BY COMPANIES.										
	Bengal and North-Western : Tirhoot section	756'30	756'30	100	100	Rs.	Rs.	344	346	2,039	2,639
Company's section	19,09,421					19,09,421					
XXXV.	Rajputana-Malwa (a) - - -	1,766'65	1,783'93	424	424	74,49,005	74,74,783	1,301	1,301	7,244	7,244
XXXVI.	Southern Mahratta (b) - - -	1,403'95	1,554'87	221	221	45,19,188	45,22,131	714	714	4,685	4,685
XL.	South Indian (d) - - -	1,113'04	1,049'31	184	184	37,90,131	43,46,452	750	820	3,194	3,314
	Total - - - - -	5,039'94	5,144'41	929	940	1,76,67,745	1,82,52,787	3,109	3,181	17,162	17,882
XLIII.	STATE LINES WORKED BY THE STATE.										
	North-Western (State) (f) - - -	—	—	23	23	5,52,192	5,16,192	19	19	61	51
	Eastern Bengal (State) : Northern and Behar sections, (in- cluding the Kaunia-Dharila 2' 6" gauge branch).	477'94	478'04	75	75	13,82,665	13,87,928	281	284	1,921	1,955
	Dacca section - - - - -	85'92	85'92	14	14	2,64,353	2,64,353	67	67	246	246
XLIV.	Burma (State) - - - - -	717'50	729'89	120	120	20,17,232	20,22,954	750	598	3,217	3,224
	Total - - - - -	1,281'36	1,293'85	232	232	42,16,442	41,91,427	947	968	5,445	5,476
XLVI.	ASSISTED COMPANIES.										
	Deoghur - - - - -	4'79	4'79	3	2	743,000	43,000	10	10	8	8
	Rohilkund and Kumaon (Company's section) (g).	252'30	275'97	27	27	5,63,250	5,63,250	148	148	659	659
XLVIII.	Bengal Doonars (k) - - - - -	—	32'25	—	4	—	99,284	—	19	—	60
XLIX.	Dibru-Sadiya - - - - -	77'50	77'50	15	18	(l)	(l)	22	22	573	631
	Total - - - - -	334'59	390'51	45	52	6,06,250	7,05,534	180	199	1,240	1,358
LV.	LINES OWNED AND WORKED BY NATIVE STATES.										
	Jodhpore-Bikaner : Jodhpore Section - - - - -	291'00	364'00	13	13	2,68,369	3,85,615	64	69	265	220
	Bikaner Section - - - - -										
LVI.	Bhāvnagar - Gondal - Junāgarh - Porbandar.	329'22	(m) 379'88	33	33	6,23,686	6,23,686	186	186	894	896
	Total - - - - -	620'22	743'88	46	46	8,92,055	10,09,301	250	255	1,159	1,116
LX.	FOREIGN LINES.										
	West of India Portuguese - - -	51'00	51'00	12	15	3,98,084	4,01,523	24	24	115	115
	Total - - - - -	51'00	51'00	12	15	3,98,084	4,01,523	24	24	115	115
	Total Metre Gauge - - - - -	7,327'11	7,623'65	1,264	1,294	2,37,80,576	2,45,60,577	4,510	4,627	25,121	25,947

(a) Including the Gaekwar's Mehsāna and the Pālanpur-Deesa Railways.

(b) Including the Guntakal-Mysore Frontier, the Southern Mahratta (Mysore section), the Kolhāpur, the Yesvantpur-Mysore Frontier, and the Mysore-Nanjāngūd Railways.

(c) Fitted with the Westinghouse brake.

(d) Including the Pondicherry Railway.

(e) Fitted with vacuum automatic brakes.

(f) For metre gauge stock formerly used on the Salt branch of the late Punjab Northern (State) Railway and on the Ferozepore Tramway.

(g) Work is in progress, and English stores charged off. From 31st December 1893 to date, 22 carriages have been fitted, and 10 carriages are being fitted with vacuum-brakes, and two carriages have been fitted and two are being fitted, with train-piping.

No. 6—concluded.

and the ROLLING STOCK fitted with Continuous and Continuous Automatic Brakes—concluded.

Cranes.		Brake-vans.		Total Number of Vehicles.		Value of Vehicles.		Total Value of Rolling Stock.		Rolling Stock fitted with Continuous and Continuous Automatic Brakes.		Serial Number.
Number on the 31st December 1892.	Number on the 31st December 1893.	Number on the 31st December 1892.	Number on the 31st December 1893.	Number on the 31st December 1892.	Number on the 31st December 1893.	At the end of 1892.	At the end of 1893.	At the end of 1892.	At the end of 1893.	Number of		
										Locomotives.	Vehicles.	
13	13	67	67	2,463	3,065	Rs. 36,85,043	Rs. 44,34,246	Rs. 55,94,464	Rs. 63,43,667	—	—	XXXIII.
26	26	282	282	8,853	8,853	1,31,32,686	1,31,57,092	2,05,81,691	2,06,31,875	—	—	XXXV.
20	20	188	188	5,807	5,807	79,79,644	80,05,142	1,24,98,832	1,25,27,273	(c) 3	(c) 19	XXXVI.
3	3	†60	60	4,007	4,197	69,17,286	77,06,351	1,07,07,426	1,20,52,803	(e) 22	(e) 100	XL.
62	62	597	597	20,930	21,722	3,17,14,668	3,33,02,831	4,93,82,413	5,15,55,618	25	119	
—	—	1	1	81	71	2,89,182	2,86,512	8,41,374	8,02,704	—	—	—
7	7	52	51	2,261	2,297	36,85,669	37,77,605	50,68,334	51,65,533	(g)	(g)	XLIII.
3	3	10	10	326	326	4,89,706	(h) 4,89,625	7,54,059	(h) 7,53,978	—	—	
18	18	†120	128	3,935	3,938	57,59,300	57,91,957	(i) 77,65,568	(i) 78,93,947	—	—	XLIV.
28	28	183	190	6,603	6,662	1,02,23,857	1,03,45,699	1,44,29,335	1,45,26,162	—	—	
—	—	2	2	20	20	49,236	49,236	†92,236	92,236	—	—	XLVI.
6	6	27	27	840	840	13,10,247	13,10,959	18,73,497	18,74,209	—	—	XLVII.
—	1	—	5	—	85	—	1,92,363	—	2,91,647	—	—	XLVIII.
1	1	12	18	608	672	(l)	(l)	11,81,891	13,04,386	—	—	XLIX.
7	8	41	52	1,468	1,617	13,59,483	15,52,558	31,47,624	35,62,478	—	—	
—	—	8	8	337	297	6,93,656	7,36,873	9,62,025	11,22,488	—	—	LV.
2	2	39	37	1,121	1,121	16,61,347	16,78,181	22,85,033	23,01,867	—	—	LVI.
2	2	47	45	1,458	1,418	23,55,003	24,15,054	32,47,058	34,24,355	—	—	
1	1	9	9	149	149	2,76,244	2,86,575	6,74,328	6,88,103	(c) 4	(c) 30	LX.
1	1	9	9	149	149	2,76,244	2,86,575	6,74,328	6,88,103	4	30	
100	101	877	893	30,608	31,568	4,59,20,255	4,79,02,717	7,08,80,758	7,37,56,716	29	149	

(h) Decrease due to adjustment of unpaid wages.

(i) Excludes Rs. 10,964 on account of receipts on capital account which cannot be distributed between the sub-heads.

(j) Including the Rohilkund and Kumaon Railway (Lucknow-Bareilly section).

(k) Opened for traffic on the 15th January 1893.

(l) Value of engines and vehicles not recorded separately.

(m) Including the Jetalpur-Rajkot Railway.

* From Statement No. 25, pages 128 to 128.

† Revised figures.

▲ 82894.

K.

STATEMENT No. 6 A.

NUMBER of CARRIAGES fitted with RETIRING ACCOMMODATION for FEMALES on the
31st December 1893, in accordance with Section 64 of Act IX. of 1890.

Serial No.	Railway.	Intermediate Class.	Third Class.	Total.	Remarks.
Standard Gauge.					
STATE LINES WORKED BY COMPANIES.					
I.	East Indian - - - -	—	50	50	
II.	Bengal-Nágpur - - - -	—	20	20	
III.	Indian Midland - - - -	—	20	20	
STATE LINES WORKED BY THE STATE.					
IX.	North-Western (State) - - -	78	(a) 78	156	(a) Of these 27 are bogie carriages.
XI.	Oudh and Rohilkhand (State) -	—	36	36	
XII.	Eastern Bengal (State)-	(b) 10	(b) 14	24	(b) Three intermediate and one third-class are in hand.
XV.	East Coast (State) - - -	—	2	2	
LINES WORKED BY GUARANTEED COMPANIES.					
XVIII.	Great Indian Peninsula - - -	—	113	113	
XIX.	Bombay, Baroda, and Central India -	6	(c) 11	17	(c) One carriage now under construction and three other ambulance third-class carriages, which have been ordered to be fitted with retiring accommodation, will, when done, make a total of 15 third-class carriages.
XX.	Madras - - - -	—	44	44	
LINE OWNED BY NATIVE STATE AND WORKED BY COMPANY.					
XXVI.	The Nizam's Guaranteed State -	—	14	14	
Metre Gauge.					
STATE LINES WORKED BY COMPANIES.					
XXXIII.	Bengal and North-Western: Tirhoot section - - - -	—	24	24	
	Company's section - - - -				
XXXIV.	Rohilkund-Kumaon (Lucknow-Bareilly section)	(d) 5	—	5	(d) Composite (intermediate and third-class) carriages with latrine accommodation in both compartments.
XXXV.	Rajputana-Malwa - - - -	—	55	55	
XXXVII.	Southern Mahratta - - - -	—	50	50	
XXXIX.	Southern Mahratta (Mysore section) -				
XL.	South Indian - - - -	—	(e) 35	35	(e) One bogie carriage.
STATE LINES WORKED BY THE STATE.					
XLIII.	Eastern Bengal: Northern and Behar sections (including the Kaunia-Dharlla, 2' 6" Gauge Branch).	21	20	41	
	Dacca section - - - -	3	4	7	
XLIV.	Burma (State) - - - -	5	30	35	
ASSISTED COMPANIES.					
XLVII.	Rohilkund-Kumaon (Company's section).	(d) 3	—	3	
XLIX.	Dibru-Sadiya - - - -	—	4	4	
LINES OWNED AND WORKED BY NATIVE STATES.					
LV.	Jodhpore-Bickaneer: Jodhpore Section - - - -	—	10	10	
	Bickaneer Section - - - -				
LVI.	Bhávsnagar-Gondal-Junágarh-Porbandar	—	12	12	
Special Gauges.					
ASSISTED COMPANY.					
LXIII.	Darjeeling-Himalayan (2' 0") - - -	—	2	2	
LINE OWNED AND WORKED BY NATIVE STATE.					
LXVI.	Morvi (2' 6") - - - -	—	6	6	

STATEMENT No. 6 B.

CAPITAL locked up in STORES on the STANDARD and METRE GAUGE RAILWAYS on the 31st December 1893, as compared with the 31st December 1892.

Serial No.	Railway.	Balance at end of previous year.	Balance on the 31st December 1893.	Remarks.
	<i>Standard Gauge.</i>	Rs.	Rs.	
	STATE LINES WORKED BY COMPANIES.			
I.	East Indian - - - - -	52,84,786	60,36,339	
II.	Bengal-Nágpur - - - - -	38,13,410	30,55,703	
III.	Indian Midland - - - - -	24,89,564	21,16,611	
V.	Godhra-Rutlam - - - - -	16,11,976	24,59,793	
VI.	Wardha Coal - - - - -	There are no stores on this railway.		
VII.	Dhond-Manmád - - - - -	1,744	35,030	
VIII.	Bezwada Extension (including the Bezwada-Godávari section of the East Coast Railway).	There are no stores on this railway.		
	Total - - - - -	1,32,01,480	1,37,03,476	
	STATE LINES WORKED BY THE STATE.			
IX.	North-Western (State) - - - - -	1,08,07,444	1,06,58,662	
X.	Hyderabad-Umerkot - - - - -	(a)	1,691	(a) No stores account was opened in 1892.
XI.	Oudh and Rohilkhand (State) - - - - -	18,31,951	19,06,248	
XII.	Eastern Bengal (State) (b) - - - - -	20,88,496	19,26,890	(b) Including the narrow gauge sections.
XIII.	Bengal Central - - - - -	1,02,317	93,026	
XIV.	Calcutta Port Commissioners' - - - - -	Information not available.		
XV.	East Coast (State) - - - - -	59,16,291	42,96,203	
	Total - - - - -	2,07,46,499	1,88,82,720	
	LINES WORKED BY GUARANTEED COMPANIES.			
XVIII.	Great Indian Peninsula - - - - -	52,54,209	45,08,160	
XIX.	Bombay, Baroda, and Central India - - - - -	27,21,629	25,00,095	
XX.	Madras - - - - -	29,25,393	28,31,313	
	Total - - - - -	1,09,01,231	98,39,568	
	ASSISTED COMPANIES.			
XXI.	Delhi-Umballa-Kalka - - - - -	2,828	49,373	
XXII.	Tarkessur - - - - -	There are no stores on this railway.		
	Total - - - - -	2,828	49,373	
	LINES OWNED BY NATIVE STATES AND WORKED BY COMPANIES.			
XXIII.	Khámgaon - - - - -	3,611	2,046	
XXIV.	Amráoti - - - - -	8,604	8,352	(c) Including the Bhopal-Itársi railway (British section).
XXV.	Bhopal-Itársi (Native State Section) (c) - - - - -	18,340	(d) Nil.	(d) Stores account was closed in 1893.
XXVI.	The Nizam's Guaranteed State - - - - -	6,23,080	6,88,293	
XXVII.	The Gaekwar's Petlád - - - - -	8,706	10,393	
	Total - - - - -	6,62,341	7,09,084	
	LINE OWNED BY NATIVE STATE AND WORKED BY STATE RAILWAY AGENCY.			
XXIX.	Rájpura-Bhátinda - - - - -	50,893	47,428	
	Total - - - - -	50,893	47,428	
	Total Standard Gauge - - - - -	4,55,65,272	4,32,31,649	

STATEMENT No. 6 B.—concluded.

CAPITAL locked up in STORES on the STANDARD and METRE GAUGE RAILWAYS on the 31st December 1893, as compared with 31st December 1892.

Serial No.	Railway.	Balance at end of previous year.	Balance on the 31st December 1893.	Remarks.
	<i>Metre Gauge.</i>	Rs.	Rs.	
	STATE LINES WORKED BY COMPANIES.			
XXXIII.	Bengal and North-Western :			
	Tirhoot Section - - - - -	6,42,498	7,81,361	(a) Including the Pálanpur-Deesa railway. (b) Including the branch lines worked.
	Company's Section - - - - -			
XXXV.	Rajputana-Malwa (a) - - - - -	42,47,574	43,57,728	
XXXVII.	Southern Mahratta (b) - - - - -	20,61,905	17,93,106	
XL.	South Indian - - - - -	29,18,677	32,45,377	
	Total - - - - -	98,70,654	1,01,77,572	
	STATE LINE WORKED BY THE STATE.			
XLIV.	Burma (State) - - - - -	12,87,494	11,34,749	
	Total - - - - -	12,87,494	11,34,749	
	ASSISTED COMPANIES.			
XLVI.	Deoghur - - - - -	2,150	1,185	(c) Including the Rohilkund and Kumaon railway (Lucknow-Bareilly Section).
XLVII.	Rohilkund and Kumaon (Company's Section) (c) - - - - -	1,49,790	1,69,125	
XLVIII.	Bengal Dooars - - - - -	3,07,452	67,845	
XLIX.	Dibru-Sadiya - - - - -	1,03,884	1,55,400	
	Total - - - - -	5,63,276	3,93,555	
	LINE OWNED BY NATIVE STATE AND WORKED BY COMPANY.			
LI.	The Gaekwar's-Mehsána - - - - -	Information not available.		
	LINES OWNED AND WORKED BY NATIVE STATES.			
LV.	Jodhpore-Bickaneer :			
	Jodhpore Section - - - - -	3,24,443	2,68,693	
	Bickaneer Section - - - - -			
LVI.	Bhávnagar-Gondal-Junágarh-Porbandar - - - - -	1,16,107	3,36,166	
LVII.	Jetalsar-Rájkot - - - - -	Information not available.		
	Total - - - - -	4,40,550	6,04,859	
	FOREIGN LINE.			
LX.	West of India Portuguese - - - - -	2,92,567	2,64,683	
	Total - - - - -	2,92,567	2,64,683	
	Total Metre Gauge - - - - -	1,24,54,541	1,25,75,418	
	Total Standard and Metre Gauge Railways - - - - -	5,80,19,813	5,58,07,067	

CHAPTER VI.

CAPITAL.

The total capital expenditure on Indian Railways up to the 31st of December 1893, including lines under construction and survey, &c., amounted to Rs. 2,49,12,96,103, allocated as follows:—

	Rs.	£
State Railways, <i>vide</i> details on pages 80 to 83	151,11,88,366	
State lines leased to companies, page 88	- 30,08,85,171	- 23,878,870
Guaranteed Railways, page 88	- 49,39,41,161	- 45,277,940
Subsidised Company, page 88 footnote (b)	- 20,82,280	- 170,272
Assisted Companies*	- 5,97,61,038	
Native States, pages 85 to 87	- 10,01,84,640	
Foreign lines, page 93	- 1,68,43,359	
	248,48,86,015	
Surveys, page 84	- 38,55,759	
Collieries, page 84	- 25,54,329	
	249,12,96,103	

The sterling equivalent of the expenditure on guaranteed lines, on State lines leased to companies and on the Rohilkund-Kumaon Railway, is also given, the rupee outlay being converted into sterling at the rates of exchange applicable in each case. The figures under the head "State railways" are based, in the case of lines which have been acquired by Government from guaranteed railway companies, on the price paid to the shareholders at the time of purchase converted at the rate of 1l. = 10 rupees. On State lines the indirect charges, *i.e.*, leave and pension allowances and capitalised value of abatement of land revenue, are not included.

2. Up to the 31st of December 1893, the total amount of capital raised by the various guaranteed railway companies was 45,613,396l., and for State lines leased to Companies, 24,733,414l., or in all 70,349,810l., as under:—

STATEMENT No. 7.
GUARANTEED RAILWAYS.

Particulars.	XVIII.	XIX.	XX.	Total.
	Great Indian Peninsula Railway.	Bombay, Baroda, and Central India Railway.	Madras Railway.	
	£	£	£	£
Share Capital at 5 per cent.	20,000,000	7,550,300	8,757,670	36,307,970
Share Capital at 4½ per cent.	—	—	999,960	999,960
Share Capital at 4¼ per cent.	—	—	500,000	500,000
Debentures at 3½ per cent.	804,800	—	—	804,800
Debentures at 3¼ per cent.	1,866,100	1,238,500	462,200	3,566,800
Debentures at 3 per cent.	300,000	—	337,800	637,800
Debenture Stock at 4 per cent.	2,701,450	—	—	2,701,450
Capital not bearing interest	64,183	18,419	12,014	94,616
Total	25,736,533	8,807,219	11,069,644	45,613,396

* As per details on pages 92 and 93, excluding the Rohilkund-Kumaon Railway (Company's section), shown above under Subsidised Company

Add Nilgiri Railway (under construction)	Rs.
	2,97,26,803
Add Bengal and North-Western Railway (Company's section)	15,50,000
	2,84,84,235
Total	5,97,61,038

The capital not bearing interest is made up thus :—

Premium on share capital and debentures	-	-	£ 320,507
Discount on debenture stock—	£		
Stock represented as shown above	-	2,701,450	
Cash received	-	-	2,475,559
Discount	-	-	225,891
Balance, excess premium	-	-	94,616

STATEMENT No. 8.

STATE LINES LEASED TO COMPANIES.

Particulars.	II. Bengal- Nágpur. Railway.	III. Indian Midland Railway.	XIII. Bengal Central Railway.	XXXIV. Rohilkund- and Kumaon Railway (Lucknow- Bareilly Section).	XXXVI. Southern Mahratta Railway (in- cluding Bareilly-Kistna Railway).	XXXVIII. Southern Mahratta Railway (Mysore Section).	XL. Assam- Bengal.	Total.
	£	£	£	£	£	£	£	£
Share capital at 4 per cent.	3,000,000	3,000,000	—	—	—	—	—	6,000,000
Share capital at 3½ per cent.	—	—	500,000	—	*3,500,000	—	1,394,560	5,394,560
Advances from money raised under Act 51 Vict. cap. 5.	2,760,000	1,345,000	500,000	—	2,129,900	—	—	6,734,900
Debentures at 3½ per cent.	1,000,000	1,000,000	—	—	255,000	—	—	2,255,000
Debentures at 3¼ per cent.	500,000	1,754,100	—	147,000	688,100	—	—	3,089,200
Debenture stock at 4 per cent.	—	—	—	—	—	1,200,000	—	1,200,000
Capital not bearing interest.	5,781	2,016	—	—	30,957	24,000	—	62,754
Total	7,265,781	7,101,116	1,000,000	147,000	6,603,957	1,224,000	1,394,560	24,736,414

* 4 per cent. up to the 31st December 1890, thereafter 3½ per cent.

3. The following tables contain further information in detail regarding the Capital transactions of the different Railways:—

STATEMENT No. 9.

STATEMENT of DEBENTURE LOANS on the 31st of December 1893.

Serial Number.	RAILWAY.	Amounts.		Rate of Interest.	Date at which Loan expires.	REMARKS.
		£	£			
XVIII.	Great Indian Peninsula	804,800	-	3½	30th June 1895.	
		264,000	-	3½	30th June 1895.	
		300,000	-	3	31st December 1895.	
		300,000	-	3½	30th June 1896.	
		300,000	-	3½	31st December 1896.	
		1,002,100	-	3½	30th June 1897.	
			2,970,900			
XIX.	Bombay, Baroda, and Central India.	100,000	-	3½	5th May 1896.	
		250,000	-	3½	15th June 1896.	
		100,000	-	3½	1st April 1897.	
		232,000	-	3½	1st February 1898.	
		20,500	-	3½	1st August 1898.	
		536,000	-	3½	1st December 1898	
			1,238,500			
XX.	Madras - - -	178,500	-	3	30th June 1895.	
		60,000	-	3½	31st December 1895.	
		200,000	-	3½	31st December 1896.	
		5,100	-	3	30th June 1897.	
		102,200	-	3½	31st December 1897	
		100,000	-	3½	31st December 1898.	
		14,200	-	3	30th June 1899.	
		140,000	-	3	30th June 1900.	
			800,000			
	Guaranteed - - -	-	5,009,400			
	STATE LINES LEASED TO COMPANIES.					
II.	Bengal-Nággpur - -	1,000,000	-	3½	18th February 1895.	
		500,000	-	3½	18th February 1895.	
			1,500,000			
III.	Indian Midland - - -	1,000,000	-	3½	1st January 1894.	
		1,000,000	-	3½	1st July 1895.	
		171,200	-	3½	1st January 1896.	
		582,900	-	3½	1st July 1896.	
			2,754,100			
XXXIV.	Rohilkund-Kumaon (Lucknow-Bareilly section).					
	The sum of Rs. 20,34,195 raised by the issue of these sterling debentures was paid into the Government Treasury, Calcutta.	-	147,000	3½	1st July 1898.	
XXXVII.	Southern Mahratta - -	255,000	-	3½	1st October 1894.	
		88,100	-	3½	1st October 1898.	
		600,000	-	3½	1st April 1899.	
			943,100			
	State - - -	-	5,344,200			
	PURCHASED BY THE STATE.					
XL.	South Indian - - -	-	313,700	3½	1st July 1896.	
	Total - - -	-	10,667,300			

STATEMENT

STATEMENT of EXPENDITURE in England and in India on Indian State Railways

Classification of Expenditure.	STATE LINES WORKED								
	STANDARD GAUGE.						METRE		
	Open Lines.						Open		
	I. East Indian.	IV. Bhopal- Itarsi (British Section).*	V. Godhra- Rutlam.	VI. Wardha Coal.	VII. Dhond- Mamád.	VIII. Bezváda Extension.	XXXIII. Bengal and North Western, Tirhoot Section.	XXXV. Rajputana- Malwa.	XXXVI. Pálanpur Deesa (Government Share).
	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
Purchase of Line - - -	37,20,00,000	—	—	—	—	—	—	—	—
Overdrawn capital - -	28,45,269	—	—	—	—	—	—	—	—
Preliminary Expenses -	1,87,490	—	1,71,835	91,642	1,23,698	15,319	1,83,608	22,71,636	—
Land - - - -	10,94,583	—	15,864	4,745	98,532	47,109	9,76,786	13,19,599	—
Formation - - - -	13,32,740	—	39,72,376	3,02,318	9,14,803	1,75,513	10,74,295	72,40,745	—
Bridgework - - - -	56,34,475	—	28,90,472	10,51,024	21,77,469	1,01,790	40,56,628	2,15,86,001	—
Fencing - - - -	4,35,434	—	57,640	2,22,989	2,99,753	19,878	9,09,935	26,30,731	—
Electric telegraph - -	—	—	—	—	—	—	—	—	—
Ballast and permanent-way -	1,17,16,653	—	14,44,414	17,51,227	50,20,395	6,14,631	80,05,490	3,70,93,142	—
Stations and buildings - -	62,73,888	—	4,49,398	3,61,990	8,41,077	3,02,566	31,55,690	1,77,66,262	—
Colliery works - - -	8,23,312	—	—	—	—	—	—	—	—
Loss on working - - -	—	—	—	—	—	—	—	—	—
Plant - - - -	11,40,336	—	7,515	2,19,460	1,87,833	9,463	5,78,049	28,73,355	—
Ferries - - - -	5,45,525	—	—	—	—	—	5,45,099	—	—
Rolling stock - - -	56,16,467	—	—	3,79,332	17,298	20,384	30,78,436	2,06,31,984	—
General charges - - -	13,80,604	—	5,10,012	4,52,588	7,74,986	1,17,275	13,65,568	83,44,618	—
Suspense accounts - - -	60,73,657	—	25,68,013	—	35,030	—	2,83,939	43,57,728	—
Exchange - - - -	—	—	—	1,90,918	6,56,990	—	7,84,690	50,75,830	—
Deduct— Receipts on capital account -	—	—	5,802	40,544	15,719	2,472	91,290	2,76,053	—
Deduct— Value of assets made over to undertakings, sale proceeds of surplus stores, dis- mantled buildings, &c.	1,00,09,725	—	—	—	—	—	—	—	—
TOTAL - - -	40,68,96,213	20,25,058	1,20,90,746	49,87,689	1,11,37,125	14,21,456	2,49,02,833	13,09,15,578	1,78,953

* Excluding Rs. 60,570 incurred on surveys of the Bhopal-Itarsi Railway shown under "Completed Surveys,"

† Expenditure incurred by Government to the 31st December 1887, including liabilities on

‡ Including Rs. 60,20,349, outlay on gradient improvements. The total outlay is made

	East Indian. Rs.	South Indian. Rs.
§ Total cost to the State in acquiring guaranteed lines, plus subsequent outlay (1)	40,68,96,213	8,31,21,277
Deduct—"Purchase of line" and "Overdrawn capital," as shown above	37,46,45,269	5,69,25,570
Less undrawn capital at the time of purchase	—	— 24,296
dd—Outlay incurred by the guaranteed companies to the time of purchase	3,22,50,944	2,62,20,003
Total expenditure incurred on the construction of line to the 31st December 1893 (2)	37,17,65,626	5,01,11,040
Difference between (1) and (2)	3,51,30,587	7,65,31,043
		67,90,234

No. 10.

appropriated to the various Undertakings, to the 31st of December 1893.

BY COMPANIES.						STATE LINES WORKED BY THE STATE. °			
GAUGE.						STANDARD GAUGE.			
Lines.			Under Construction.			Open Lines.			
XXXVIII. Guntakal Mysore Frontier.	XL. South Indian (including Villupuram- Guntakal and Nellore Branch).	Bellary- Kistna.†	Lucknow- Bareilly-	XLL. Assam- Bengal.	XLII. Mayavaram- Mutupet.	IX. North- Western (State).	X. Hyderabad- Umarkot.	XI. Oudh and Rohil- khand (State).	XII. Eastern Bengal (State).
Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
—	5,69,25,570	—	—	—	—	14,00,91,244	—	10,33,60,490	4,41,55,749
—	—	—	—	—	—	28,70,470	—	—	4,24,483
59,327	4,79,461	2,24,761	1,28,279	38,594	16,099	30,86,892	36,350	—	1,34,227
18,716	3,83,586	83,002	1,49,359	5,48,726	1,89,952	24,76,403	22,268	— 46,129	22,43,420
7,82,349	30,14,315	32,25,779	2,98,171	—	2,05,984	4,45,70,946	1,35,845	34,593	8,79,932
2057,037	63,01,185	19,50,678	4,79,483	—	5,96,368	7,22,97,604	2,75,060	1,46,243	23,30,396
51,883	2,25,632	1,04,683	95,675	—	11,106	33,02,234	18,981	19,118	3,84,429
1,440	17,274	—	—	—	1,955	1,58,849	—	—	—
18,22,300	65,14,352	28,64,839	22,62,741	—	5,35,269	7,89,53,962	8,55,486	2,48,760	72,39,288
3,96,936	18,31,667	12,84,829	5,96,220	—	1,05,903	2,34,82,623	1,44,232	6,96,263	35,31,501
—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—
28,363	4,16,629	7,49,876	1,15,281	—	3,032	79,92,763	19,719	—1,01,664	3,33,734
—	—	—	—	—	—	6,20,994	26,907	—	4,79,537
—	50,97,853	8,15,118	6,57,002	—	—	3,58,46,688	7,181	6,06,533	35,69,016
6,13,786	22,35,952	15,73,545	3,06,580	—	2,20,250	1,87,95,544	7,15,440	—	13,88,617
7,721	33,04,810	32,29,347	—	56	2,27,039	1,12,39,010	1,680	17,42,572	19,48,666
—	2,42,360	4,91,090	42,150	—	—	94,55,880	—	—	2,24,460
52	—	20,012	9,803	—	—	25,02,992	68	14	2,33,678
—	38,69,359	—	—	—	—	48,36,651	—	33,02,053	7,27,880
58,39,806	§ 8,31,21,277	1,65,77,535	51,21,138	5,87,376	21,62,957	† § 44,79,96,603	16,61,091	§ 10,34,04,712	§ 6,83,05,897

as it was decided by Government to omit this expenditure from the capital account of the railway.
that date and law charges debitable to Government after the transfer of the line.
up of Rs. 32,63,70,688 on commercial section and Rs. 12,16,25,915 on military section.

North-Western. Rs.	Oudh and Rohilkhand. Rs.	Eastern Bengal. Rs.	Total. Rs.
44,79,06,603	10,34,04,712	6,83,05,897	1,10,97,24,702
14,29,61,714	10,35,60,490 } — 8,41,459 }	4,45,80,232	72,24,73,275 }
—	—	—	— 8,65,755 }
50,50,34,889	8,85,681	2,37,25,665	58,81,17,182
12,37,10,012	9,16,17,643	3,56,60,089	64,06,13,566
42,87,44,901	9,25,03,324	5,93,35,754	1,08,87,30,048
1,92,51,702	1,09,01,388	89,20,143	8,09,54,054

STATEMENT

EXPENDITURE in England and in India on Indian State Railways,

Classification of Expenditure.	STATE LINES WORKED								
	STANDARD GAUGE.					METRE GAUGE.			
	Open Lines.		Under Construction.			Open Lines.			Under Construction.
	XV. East Coast (State).	Lucknow- Rae Bareli- Benares.	Bareilly- Rampur- Moradabad.	XVI. Mushkaf- Bolán.	XVII. Mári- Attock.	XLIII. Eastern Bengal (State).		XLIV. Burma (State).	XLV. Mu Valley.
						Northern and Behar Sections, including the Kaunia-Dharila (2' 6" Gauge) Branch.	Dacca Section.		
	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
Purchase of line - - -	—	—	—	—	—	—	—	—	—
Overdrawn capital - - -	—	—	—	—	—	—	—	—	—
Preliminary expenses . - -	3,38,459	50,094	24,022	44,155	1,98,000	1,98,600	1,27,798	4,65,993	5,07,073
Land - - - - -	10,52,915	61,748	1,26,371	1,747	1,01,333	13,12,588	5,40,149	9,33,320	1,74,620
Formation - - - - -	40,81,881	1,09,063	2,66,801	28,01,474	14,84,535	33,98,205	6,96,993	59,41,963	27,09,164
Bridgework - - - - -	97,93,682	2,92,546	17,82,002	23,09,935	10,96,565	77,53,520	5,90,702	84,99,867	20,36,017
Fencing - - - - -	1,49,919	1,47,563	69,288	275	—	10,68,664	1,05,445	25,20,694	95,532
Electric telegraph - - -	—	—	—	—	—	—	—	—	9,238
Ballast and permanent-way -	92,97,206	14,28,209	16,31,176	5,97,993	—	1,04,08,030	17,68,463	1,41,65,548	45,23,575
Stations and buildings - -	14,98,997	1,94,880	92,065	2,35,366	1,04,593	41,93,669	12,37,311	57,13,821	11,55,573
Colliery works - - - - -	—	—	—	—	—	—	—	—	—
Loss on working - - - - -	—	—	—	—	—	—	—	—	—
Plant - - - - -	1,90,912	7,154	6	—	—	12,09,660	2,18,981	12,11,995	82,254
Ferries - - - - -	65,622	—	—	—	—	9,35,441	3,122	51,155	5,98,588
Rolling stock - - - - -	25,67,047	—	—	2,91,222	7,244	51,66,151	7,54,176	78,14,911	18,09,674
General charges - - - - -	24,93,751	1,16,523	2,41,062	5,96,169	2,10,821	30,42,294	3,63,574	37,08,123	19,33,296
Suspense accounts . - - -	43,77,947	1,53,453	16,27,140	8,59,963	3,09,146	—	—	11,04,577	18,27,779
Exchange - - - - -	—	—	—	—	—	11,46,540	3,06,580	12,50,610	—
Deduct— Receipts on capital account -	40,365	248	6,964	18,705	2,681	2,74,396	10,250	1,71,422	31,523
Deduct— Value of assets made over to undertakings, sale proceeds of surplus stores, dis- mantled buildings, &c.	—	—	—	—	—	—	—	—	—
TOTAL - - - - -	3,58,67,473	25,60,990	58,52,978	77,19,594	35,09,555	3,95,58,966	67,02,994	5,32,11,165	1,71,35,840

* Represents amount of depreciation, &c., allowed on works and stores on transfer to the Company.

† In abeyance.

‡ The expenditure on the Pátri Railway was not met from railway grants, but is included to arrive at total

§ Deducting the total difference (Rs. 3,08,94,054) shown in foot-note on p. 81, the figures are Rs. 1,43,01,94,312.

No. 10—continued.

appropriated to the various Undertakings, to the 31st of December 1893—continued.

BY THE STATE.		UNCLASSIFIED EXPENDITURE.											TOTAL STATE LINES.
SPECIAL GAUGES.													
Open Lines.													
Cherra- Com- panyganj (2' 6").	LXII. Jorhāt. (2' 0").	Frontier Railway Reserve Material.	Peshawār Railway Reserve.	Southern Maharatta. *	Bilāspur- Etāwah Survey.	Vizaga- patam- Raipur.†	Rana- ghat- Bhagwan- gola.†	Nāgpur- Chhat- tisgarh Deprecia- tion Account.	Sind- Pishin Petroleum Opera- tions.	Reserve Stores at Port.	Pātri.‡		
Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	
—	—	—	—	—	—	—	—	—	—	—	—	71,65,33,053	
—	—	—	—	—	—	—	—	—	—	—	—	59,40,222	
236	388	—	—	—	75,132	2,45,035	83,816	—	92,841	—	—	97,05,850	
1,670	6,049	—	—	—	—	—	1,01,972	—	—	—	—	1,40,41,093	
1,55,878	81,469	—	—	—	—	—	90,698	849	—	—	—	8,99,79,397	
57,089	64,392	—	—	—	—	—	—	22,886	—	—	—	15,82,40,116	
—	2,999	—	—	—	—	—	—	—	—	—	—	1,30,36,519	
—	—	—	—	—	—	—	—	—	—	—	—	1,88,756	
1,80,120	3,16,749	—	—	—	—	—	—	2,41,347	—	—	—	21,15,51,370	
49,865	81,274	—	—	—	—	—	—	11,788	7,174	—	—	7,53,02,421	
—	—	—	—	—	—	—	—	—	—	—	—	8,23,812	
—	—	—	—	—	—	—	—	—	—	—	—	—	
1,32,598	39,384	—	—	—	—	—	546	671	8,550	—	—	1,76,76,455	
4,516	—	—	—	—	—	—	—	—	—	—	—	38,76,486	
92,913	1,53,085	—	—	—	—	—	—	1,88,268	—	—	—	9,48,87,983	
1,07,843	41,248	23,957	—	—	—	—	25,681	—	—	—	—	5,11,05,715	
—	15,767	42,85,592	3,07,759	—	—	—	—	49,146	36,296	8,56,505	—	5,08,90,357	
—	—	—	—	—	—	—	—	—	—	—	—	1,98,68,048	
4,141	3,124	1	—	—	—	—	263	13	10	—	—	37,63,105	
—	—	—	—	—	—	—	—	—	—	—	—	2,27,45,668	
7,78,390	7,99,680	43,14,548	3,67,759	5,27,070	75,132	2,45,035	3,02,450	5,14,942	1,44,851	8,56,505	8,08,405	\$1,51,11,88,366	

Details not known.

railway outlay. It is included under the Bombay, Baroda and Central India Railway in the statement on page 92.

STATEMENT

EXPENDITURE in England and in India on Indian State Railways

Classification of Expenditure.	SURVEYS (EXCLUDING ABANDONED SURVEYS).			COLLIERIES.		
	Surveys in Progress.	Surveys completed.	Total.	Warora.*	Umari.*	Total.
	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
Purchase of line - - - - -	—	—	—	—	—	—
Overdrawn capital - - - - -	—	—	—	—	—	—
Preliminary expenses - - - - -	7,50,195	30,91,386	38,41,581	—	—	—
Land - - - - -	—	—	—	—	—	—
Formation - - - - -	—	—	—	—	—	—
Bridgework - - - - -	—	—	—	—	—	—
Fencing - - - - -	—	—	—	—	—	—
Electric telegraph - - - - -	—	—	—	—	—	—
Ballast and permanent-way - - - - -	—	—	—	—	—	—
Stations and buildings - - - - -	—	—	—	—	—	—
Colliery works - - - - -	—	—	—	10,75,329	4,07,044	14,82,373
Loss on working - - - - -	—	—	—	—	—	—
Plan - - - - -	—	—	—	2,65,468	4,29,616	6,95,084
Ferries - - - - -	—	—	—	—	—	—
Rolling stock - - - - -	—	—	—	26,491	13,795	40,286
General charges - - - - -	—	—	—	1,040	66,375	67,315
Suspense accounts - - - - -	13,430	3,803	17,233	1,73,323	85,743	2,59,066
Exchange - - - - -	—	—	—	12,042	60	12,102
Deduct— Receipts on capital account - - -	161	2,894	3,055	1,806	91	1,897
Deduct— Value of assets made over to undertakings, sale proceeds of surplus stores, dismantled buildings, &c.	—	—	—	—	—	—
Deduct— Contribution towards the construction of the Bhopal and Palampur-Deesa Railways by the Government of India.	—	—	—	—	—	—
TOTAL - - - - -	7,63,464	30,92,295	38,55,759	15,51,887	10,02,442	25,54,329

* The expenditure on collieries is included in this statement

No. 10—*continued.*appropriated to the various Undertakings, to the 31st December 1893—*continued.*

GRAND TOTAL.	LINES OWNED BY NATIVE STATES AND WORKED BY COMPANIES.							
	STANDARD GAUGE.						METRE GAUGE.	
	Open Lines.					Under Construction.	Open Line.	Under Construction.
State Lines, Surveys, and Collieries.	XXIII. Khámgaon.	XXIV. Amráoti.	XXV. Bhopal-Itársi (Native State Section).	XXVI. The Nizam's Guaranteed State.	XXVII. The Gaekwar's Petlad.	XXVIII. Kolar Goldfields.	XXXVI. Pálanpur-Deesa (Durbar Share).	LI. The Gaekwar's Mehsána.
Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
71,65,33,053	—	—	—	2,30,30,382	—	Details not known.	—	—
59,40,222	—	—	—	—	—		—	—
1,35,47,431	369	11,799	—	1,88,029	7,991		1,991	13,659
1,40,41,093	1,116	2,450	15,667	—	—		—	—
8,99,79,397	44,036	20,377	15,86,839	14,15,712	83,687		62,837	2,70,809
15,82,40,116	57,809	62,106	18,66,789	11,25,091			61,180	4,67,648
1,30,36,519	7,366	11,699	1,89,582	1,86,616			4,964	53,902
1,88,766	—	—	407	—	—		—	—
21,15,61,370	2,78,789	2,41,571	21,75,180	63,73,837	4,22,465		1,87,859	16,63,199
7,58,02,421	49,141	50,188	7,60,994	15,32,517	1,50,426		26,583	4,14,389
23,06,185	—	—	—	—	—		—	—
—	—	—	—	—	—		—	—
1,83,71,539	3,503	3,016	43,095	3,46,334	—		4,443	33,014
38,76,486	—	—	—	—	—		—	—
9,49,28,269	11,669	8,641	28,492	38,84,423	—		—	16,026
5,11,73,030	31,967	29,709	3,62,124	10,97,840	37,806		14,076	94,106
5,11,66,656	2,046	8,352	—	10,16,128	10,393		—	—
1,98,80,150	—	—	—	—	—		—	—
37,68,057	244	—	4,111	—	—		—	—
2,27,45,668	—	—	—	—	—		—	—
—	—	—	20,25,058	—	—	—	1,78,953	
1,51,75,98,454	4,87,567	4,49,908	50,00,000	4,01,96,909	7,12,768	527,634	1,85,000	30,26,752

as it has been charged to railway grants.

STATEMENT

EXPENDITURE in England and in India on Indian State Railways

Classification of Expenditure.	LINES OWNED BY NATIVE STATES AND WORKED BY COMPANIES.				LINES OWNED BY NATIVE STATES AND WORKED BY STATE RAILWAY AGENCY.			
	METRE GAUGE.			SPECIAL GAUGE.	STANDARD GAUGE.		SPECIAL GAUGE.	
	Open Lines.			Open Line.	Open Lines.		Open Line.	
	LII. Kolhapur.	LIII. Yesvantpur- Mysore Frontier.	LIV. Mysore- Nanjangud.	LXIV. The Gaekwar's Dabhoi (2' 6").	XXIX. Rajpura- Bhatinda.	XXX. Jammu and Kashmir (Native State Section).	LX. Cooch Behar (2' 6").	
	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	
Preliminary expenses - - - -	13,858		15,069	31,521	59,422	23,934	9,764	
Land - - - - -	29,115		5	—	48,350	—	10,046	
Formation - - - - -	2,74,027		1,34,002	3,49,955	2,76,794	34,938	82,400	
Bridgework - - - - -	11,22,125		83,363		5,39,059	1,32,659	59,556	
Fencing - - - - -	41,668		14,942		1,94,698	1,703	914	
Electric telegraph - - - - -	—		—	—	—	13,761	—	
Ballast and permanent-way - - -	4,91,138		2,41,610	8,51,455	41,62,652	5,70,567	3,02,756	
Stations and buildings - - - - -	2,31,331		56,970	2,34,399	10,52,889	1,13,061	30,934	
Colliery works - - - - -	—	Details not known.	—	—	—	—	—	
Loss on working - - - - -	—		—	—	—	—	2,454	
Plant - - - - -	7,059		5,808	7,817	82,150	5,260	7,058	
Ferries - - - - -	—		—	—	—	—	—	
Rolling stock - - - - -	—		—	2,34,497	—	—	76,612	
General charges - - - - -	1,09,058		40,375	1,28,231	2,68,611	60,444	52,243	
Suspense accounts - - - - -	2,308		26,407	17,283	47,428	—	30,430	
Exchange - - - - -	—		—	—	—	—	—	
Deduct— Receipts on capital account - -	—		—	—	5,112	—	—	
Deduct— Value of assets made over to undertakings, sale proceeds of surplus stores, dismantled buildings, &c.	—		—	—	—	—	—	
Deduct— Contribution towards the construction of the Bhopal and Palampur-Deesa Railways by the Government of India.	—		—	—	—	—	—	
TOTAL - - - - -	23,21,687	23,89,502	6,18,551	18,55,158	67,26,941	9,56,327	6,65,172	

No. 10—concluded.

appropriated to the various Undertakings, to the 31st December 1892—concluded.

LINES OWNED AND WORKED BY NATIVE STATES.

STANDARD GAUGE.		METRE GAUGE.					SPECIAL GAUGE.	TOTAL NATIVE STATES.
Under Construction.		Open Lines.				Under Construction.	Open Lines.	
XXXI. Bina-Guna.	XXXII. Bhopal-Ujjain.	LV. Jodhpore-Bikaner.		LVI. Bhavnagar-Gondal-Junagarh-Porbandar.	LVII. Jetalsar-Rajkot.	LVIII. Oodeypore-Chitor.	LXVI. Morvi (2' 6").	
		Jodhpore Section.	Bikaner Section.					
Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
57,681		41,739	7,826	1,19,442	14,255	7,000	18,134	—
—		1,621	—	58,377	11,451	—	1,172	—
3,02,117		2,29,141	81,424	16,83,566	2,39,446	—	6,50,637	—
4,50,690		2,15,769	5,673	41,75,808	2,00,845	—		—
3,981		5,729	338	72,706	49,630	—		—
—		36,682	—	11,774	—	—	—	—
92,511		43,85,117	6,80,642	49,10,508	6,71,273	—	9,52,358	—
30,564		3,58,644	62,072	23,53,404	1,46,921	—	37,879	—
—		—	—	—	—	—	—	—
—		—	—	—	—	—	—	—
344	Details not furnished.	49,025	5,760	3,29,732	19,394	—	15,162	—
—		—	—	—	—	—	—	—
—		10,10,891	1,11,597	23,01,867	—	—	3,47,758	—
2,30,635		89,509	10,439	8,80,129	80,175	—	1,02,847	—
23,50,228		50,144	—	3,43,951	2,203	—	31,706	—
—		—	—	—	—	—	—	—
—		—	—	12,404	—	—	308	—
—		—	—	—	—	—	—	—
—		—	—	—	—	—	—	—
—		—	—	—	—	—	—	—
35,18,701	22,76,863	64,74,611	9,65,771	1,72,28,860	14,35,593	7,000	21,57,365	10,01,84,640

STATEMENT No. 11.

GUARANTEED AND SUBSIDISED RAILWAYS AND STATE LINES LEASED TO COMPANIES.

CAPITAL authorised to be raised for each Undertaking as now sanctioned, the Amount raised, and the Amount withdrawn, to the 31st of December 1893.

Serial Number.	Railway.	Amount authorised to be raised by the Company up to the 31st December 1893.					Amount raised by the Company and advanced by the Secretary of State in England to the 31st December 1893.					Amount raised in India to the 31st of December 1893.		Total Amount raised to the 31st of December 1893.	Total Amount withdrawn to the 31st of December 1893.
		Share Capital.	Debentures.	Debt Stock.	Capital not bearing Interest (Premium).	Total.	Share Capital.	Debentures.		Capital not bearing Interest (Premium).	Advances made to Companies from money raised under Act 51 Vict. c. 5.	Share Capital.	Capital not bearing Interest.		
								Cash received.	Cash received.						
XVIII.	GUARANTEED. Great Indian Peninsula -	£ 20,000,000	£ 2,970,900	£ (a) 2,701,450	£ 290,074	£ 25,962,424	£ 19,503,103	£ 2,970,900	£ (a) 2,475,559	£ 215,145	£ —	£ 496,897	£ 74,929	£ 25,736,533	£ 25,418,604
XIX.	Bombay, Baroda, and Central India.	7,550,300	1,238,500	—	18,419	8,807,219	7,528,628	1,238,500	—	18,419	—	21,672	—	8,807,219	8,823,632
XX.	Madras -	10,257,630	800,000	—	12,014	11,069,644	10,257,630	800,000	—	12,014	—	—	—	11,069,644	11,035,704
	Total -	37,807,930	5,009,400	2,701,450	320,507	45,839,287	37,289,361	5,009,400	2,475,578	245,578	—	518,569	74,929	45,613,396	45,277,940
XLVII.	SUBSIDISED. Rohikund and Kumaon (Company's section).	200,000	—	—	—	200,000	200,000	—	—	—	—	—	—	200,000	(b) 200,000
II.	STATE LINES LEASED TO COMPANIES. Bengal-Nágpur -	3,000,000	1,500,000	—	—	4,500,000	3,000,000	1,500,000	—	5,781	2,760,000	—	—	(c) 7,265,781	7,539,110
III.	Indian Midland -	3,000,000	(d) 3,000,000	—	—	6,000,000	3,000,000	2,754,100	—	2,016	1,345,000	—	—	7,101,116	6,985,780
XIII.	Bengal Central -	500,000	(e) 500,000	—	—	1,000,000	500,000	—	—	—	500,000	—	—	1,000,000	822,614
XX XIV.	Rohikund and Kumaon (Lucknow - Bareilly section).	—	(f) 147,000	—	—	147,000	—	(f) 160,837	—	—	—	—	—	160,837	(g) 249,562
XXXVI.	Southern Mahratta (h) -	3,500,000	943,100	—	—	4,443,100	3,491,540	943,100	—	30,923	2,129,900	8,460	34	6,603,957	6,442,513
XXXVIII.	Southern Mahratta (Mysore section).	—	—	1,200,000	—	1,200,000	—	—	1,200,000	24,000	—	—	—	1,224,000	1,065,720
XL.	Assam-Bengal -	1,500,000	—	—	—	1,500,000	1,394,560	—	—	—	—	—	—	1,394,560	773,571
	Total -	11,500,000	6,090,100	1,200,000	—	18,790,100	11,386,100	5,358,037	1,200,000	62,720	6,734,900	8,460	34	24,750,251	23,878,870
	Grand Total	49,507,930	11,099,500	3,901,450	320,507	64,829,387	48,875,461	10,867,437	3,675,559	308,298	6,734,900	527,029	74,963	70,563,647	69,356,810

STATEMENT No. 12.

GUARANTEED AND SUBSIDISED RAILWAYS AND STATE LINES LEASED TO COMPANIES.

AMOUNT received from and withdrawn by each Company during the Year ended the 31st of December 1893.

Serial Number.	Railway.	Sums standing to the Credit of the Companies on the 31st of December 1892.	Sums advanced to the Companies on the 31st of December 1892.	Amount received						Amount withdrawn			Total received during the Year ended the 31st of December 1893.	Total withdrawn during the Year ended the 31st of December 1893.
				In England.			In India.			In England.		In India.		
				Share Capital.	Debentures.	Debenture Stock.	Capital not bearing Interest.	Advances made to Companies from money raised under Act 51 Vict. c. 5.	Share Capital.	Capital not bearing Interest.	On account of Stores, Establishment Charges, &c.	For Discharge of Debentures.		
				£	£	£	£	£	£	£	£	£	£	£
XVIII.	GUARANTEED. Great Indian Peninsula	65,351	—	—	259,600	—	—	—	—	—	294,962	—	—287,940	£ 70,22
XIX.	Bombay, Baroda, and Central India.	50,419	—	—	—	—	—	—	—	—	163,195	—	—96,364	66,231
XX.	Madras	90,559	—	—	—	—	—	—	—	—	82,527	—	—25,908	56,619
	Total	206,329	—	—	259,600	—	—	—	—	—	540,684	—	—410,212	130,472
XLVII.	SUBSIDISED Rohilkund - Kumaon (Company's section).	—	—	—	—	—	—	—	—	—	—	—	—	—
II.	STATE LINES LEASED TO COMPANIES. Bengal-Nágpur	—	249,199	—	—	—	—	160,000	—	—	75,383	—	108,746	184,129
III.	Indian Midland	162,042	—	—	—	—	—	—	—	—	50,606	—	—3,899	46,707
XIII.	Bengal Central	179,056	—	—	—	—	—	—	—	—	1,790	—	—122	1,668
XXXIV.	Rohilkund - Kumaon (Lucknow-Bareilly section).	—	74,937	—	—	—	—	—	—	—	5,731	—	—8,058	13,789
XXXVII.	Southern Mahratta*	118,116	—	—	—	—	—	75,000	—	—	25,444	—	—6,229	31,673
XXXIX.	Southern Mahratta (Mysore section).	119,853	—	—	—	—	—	—	—	—	—	—	—38,428	—83,428
XLI.	Assam-Bengal	972,193	—	—	—	—	—	—	—	—	218,464	—	—244,976	463,440
	Total	1,551,260	324,136	—	—	—	—	235,000	—	—	377,418	—	325,560	702,978
	Grand Total	1,757,589	324,136	—	259,600	—	—	235,000	—	—	918,102	—	—84,652	494,600
														832,450

* Including the Bellary-Kistna Railway.

STATEMENT No. 13.
GUARANTEED RAILWAYS.

WITHDRAWALS out of CAPITAL for EXPENDITURE, showing the Amount withdrawn in England and in India during each Financial Year from the commencement to the 31st of March 1894.

Year.	England.	India.	Total.
	£	£	£
1849-50	69,211	6,682	75,893
1850-51	61,164	38,099	99,263
1851-52	154,212	197,111	351,323
1852-53	174,920	252,640	427,560
1853-54	252,484	418,165	670,649
1854-55	960,878	769,278	1,730,156
1855-56	1,935,074	1,431,337	3,366,411
1856-57	1,752,813	1,762,287	3,515,100
1857-58	1,328,243	2,094,825	3,423,068
1858-59	1,941,033	3,551,075	5,492,108
1859-60	2,508,668	4,662,796	7,171,464
1860-61	2,388,315	5,190,400	7,578,715
1861-62	1,897,430	5,004,782	6,602,212
1862-63	1,852,393	4,010,951	5,863,344
1863-64	1,415,146	3,340,507	4,755,653
1864-65	1,396,821	2,725,419	4,122,240
1865-66	2,222,679	3,414,187	5,636,866
1866-67	3,958,357	3,339,346	7,297,703
1867-68	3,924,490	3,195,591	7,120,081
1868-69	1,702,452	2,165,475	3,867,927
1869-70	2,298,680	2,444,171	4,742,851
1870-71	1,899,054	1,877,216	3,776,270
1871-72	886,996	1,609,732	2,496,728
1872-73	822,995	—345,750	477,245
1873-74	1,028,032	—334,979	693,053
1874-75	1,174,893	—86,982	1,087,911
1875-76	1,151,585	—200,779	950,806
1876-77	1,222,846	—507,387	715,459
1877-78	1,792,483	—469,678	1,322,805
1878-79	1,786,235	—773,612	1,012,623
1879-80	1,256,417	—906,857	349,560
1880-81	941,781	—506,992	434,789
1881-82	1,041,022	—351,482	689,540
1882-83	1,046,483	—635,610	410,873
1883-84	1,473,138	—135,218	1,337,920
1884-85	1,391,270	—256,211	1,135,059
1885-86	1,628,033	—403,928	1,224,105
1886-87	862,685	—620,359	242,326
1887-88	991,936	—343,364	648,572
1888-89	969,816	—350,939	618,877
1889-90	905,798	—565,970	339,828
1890-91	944,842	—475,463	469,379
1891-92	597,117	—551,225	45,892
1892-93	526,181	—455,927	70,254
Total expenditure to end of 1892-93	60,237,101	44,223,360	104,460,461
Deduct withdrawals by the East Indian Railway Company	12,276,504	18,620,297	30,896,801
	47,960,597	25,603,063	73,563,660
Deduct withdrawals by the Eastern Bengal Railway Company	1,770,750	1,474,100	3,244,850
	46,189,847	24,128,963	70,318,810
Deduct withdrawals by the Sind, Punjab, and Delhi Railway Company	6,226,076	4,853,607	11,079,683
	39,963,771	19,275,356	59,239,127
Deduct withdrawals by the Oudh and Rohilkhand Railway Company	4,358,107	4,910,204	9,268,311
	35,605,664	14,365,152	49,970,816
Deduct withdrawals by the South Indian Railway Company	3,831,129	932,278	4,763,407
	31,774,535	13,432,874	45,207,409
Add expenditure during 1893-94 (partly estimated)	479,100	—573,400	105,700
Net withdrawals to end of 1893-94	32,253,635	13,059,474	45,313,109

STATEMENT No. 14.

STATE LINES LEASED TO COMPANIES.

CAPITAL WITHDRAWALS in England and in India on account of the Bengal Central, the Southern Mahratta, the Mysore, the Bengal-Nágpur, the Indian Midland, the Lucknow-Bareilly, and the Assam-Bengal Railways, during each financial year from the commencement to the 31st of March 1894.

Year.	England.	India.	Total.
	£	£	£
1881-82 - - - -	170,000	—	170,000
1882-83 - - - -	280,476	728,661	1,009,137
1883-84 - - - -	340,820	538,001	878,821
1884-85 - - - -	321,853	727,095	1,048,948
1885-86 - - - -	261,937	1,406,216	1,668,153
1886-87 - - - -	706,952	2,433,367	3,140,319
1887-88 - - - -	1,688,658	3,375,644	5,064,302
1888-89 - - - -	1,460,175	3,657,987	5,118,162
1889-90 - - - -	605,126	1,507,289	2,112,415
1890-91 - - - -	409,803	973,649	1,383,452
1891-92 - - - -	469,178	446,620	915,798
1892-93 - - - -	386,287	417,285	803,572
Total expenditure from 1881-82 to end of 1892-93	7,101,265	16,211,814	23,313,079
1893-94 (revised estimate) - - -	295,500	526,200	821,700
Total - - - -	7,396,765	16,738,014	24,134,779

STATEMENT No. 15.

SUBSIDISED RAILWAY.

WITHDRAWALS out of CAPITAL for EXPENDITURE, showing the Amount withdrawn in England and in India by the Rohilkund and Kumaon Railway Company during each financial year from the commencement to the 31st of March 1893.

Year.	England.	India.	Total.
	£	£	£
1882-83 - - - -	40,000	—	40,000
1883-84 - - - -	120,000	—	120,000
1884-85 - - - -	20,000	—	20,000
1885-86 - - - -	—	—	—
1886-87 - - - -	20,000	—	20,000
1887-88 - - - -	—	—	—
1888-89 - - - -	—	—	—
1889-90 - - - -	—	—	—
1890-91 - - - -	—	—	—
1891-92 - - - -	—	—	—
1892-93 - - - -	—	—	—
Total - - - -	200,000	—	200,000

The Company has withdrawn 200,000*l.* from the Secretary of State, but the actual expenditure to the close of the year 1893 was 170,272*l.* only.

STATEMENT No. 16.

CAPITAL OUTLAY on open lines of Railway on the 31st December 1893 and the AVERAGE COST PER MILE, excluding Branches and Extensions of the Open System still under Construction.

Serial No.	Railway.	Length of Line open on the 31st December 1893. (From Statement No. 25 pages 126 to 128).	Total Length of Single Track, including Sidings, on the 31st December 1893. (a)	Capital Outlay on Open Line to the 31st December 1893, on final Heads (exclusive of Steam-boat Service and Suspense.)	Average Cost exclusive of Steamboat Service and Suspense.		Outlay on Steam-boat Service to the 31st December 1893.	Amount at Debit of Suspense (open line) on 31st December 1893.	Total Capital Outlay on Open Line to the 31st December 1893, including Steam-boat Service and Suspense (see also Statement No. 19.)
					Per Mile open.	Per Mile of Single Track, including Sidings.			
Standard Gauge.									
STATE LINES WORKED BY COMPANIES.		Miles.	Miles.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
I.	East Indian	1,610'73	2,509'14	36,02,00,797	2,23,626	1,43,555	6,54,357	70,49,085	36,79,04,239
II.	Bengal-Nagpur	862'33	957'99	9,49,30,443	1,10,086	99,093	—	30,75,372	9,80,05,815
III.	Indian Midland	677'35	764'94	8,50,00,811	1,25,490	1,11,121	—	21,62,032	8,71,62,843
IV.	Bhopal-Itarsi (British Section)	13'11	15'82	20,25,058	1,54,467	1,28,006	—	—	20,25,058
V.	Godhra-Rutlam	25'00	26'72	15,18,815	60,753	56,842	—	—	15,18,815
VI.	Wardha Coal	44'88	50'02	49,87,689	1,11,134	97,951	—	—	49,87,689
VII.	Dhond-Manmad	145'44	159'68	1,11,02,095	76,335	69,527	—	35,030	1,11,37,125
VIII.	Bezwada Extension (including the Bezwada-Godavaria section of the East Coast Railway).	112'49	124'03	1,11,83,877	99,417	90,167	—	1,711	1,11,85,088
	Total	3,491'33	4,609'24	57,09,49,985	1,63,533	1,23,871	6,54,357	1,23,23,230	58,39,26,672
STATE LINES WORKED BY THE STATE.									
IX.	North Western (State)	(b) 2,425'49	2,994'14	(c) 40,71,77,200	(d) 1,61,311	(e) 1,30,952	44,15,818	1,11,31,034	(f) 42,27,24,052
X.	Hyderabad-Umarkot	58'91	62'17	16,32,494	27,712	26,259	26,906	1,891	16,61,091
XI.	Oudh and Rohilkhand (State)	741'11	851'88	9,31,08,289	1,25,716	1,09,432	—	18,96,025	9,50,04,314
XII.	Eastern Bengal (State)	248'75	400'09	5,55,75,224	2,23,418	1,88,907	18,61,864	19,48,866	5,93,55,754
XIII.	Bengal Central	125'01	145'14	99,93,462	79,941	68,854	—	93,309	1,00,86,771
XIV.	Calcutta Port Commissioners'	6'22	20'43	58,79,200	9,45,209	2,87,773	—	—	58,79,200
XV.	East Coast (State)	174'54	192'02	1,69,81,404	97,292	88,436	65,622	43,73,975	2,14,21,001
	Total	3,780'03	4,665'87	59,04,07,273	1,52,217	1,23,501	63,70,210	1,94,44,700	61,62,22,183
LINES WORKED BY GUARANTEED COMPANIES.									
XVIII.	Great Indian Peninsula	1,286'77	1,992'67	27,29,76,852	2,12,141	1,36,990	—	43,17,508	27,72,93,860
XIX.	Bombay, Baroda, and Central India (f)	460'90	627'31	9,46,52,623	2,05,565	1,50,887	—	24,13,584	9,70,66,207
XX.	Madras	839'22	1,013'88	11,74,85,956	1,39,994	1,15,878	—	29,03,543	12,03,89,499
	Total	2,586'89	3,633'86	48,51,14,931	1,87,523	1,33,499	—	96,34,635	49,47,49,566
ASSISTED COMPANIES.				(g) (h)					(i) (h)
XXI.	Delhi-Umballa-Kalka	161'40	178'17	1,54,21,084	95,546	86,553	—	1,03,516	1,55,24,600
XXII.	Tarkessur	22'23	25'05	17,47,280	78,000	69,752	—	—	17,47,280
	Total	183'63	203'22	1,71,68,364	93,494	84,482	—	1,03,516	1,72,71,880
LINES OWNED BY NATIVE STATES AND WORKED BY COMPANIES.									
XXIII.	Khamgaon	7'55	8'42	4,85,521	64,507	57,063	—	2,046	(h) 4,87,567
XXIV.	Amraoti	5'44	6'09	4,41,556	81,168	72,505	—	8,362	(h) 4,49,908
— XV.	Bhopal-Itarsi (Native State section)	44'00	52'41	50,00,000	1,13,638	95,402	—	—	50,00,000
XVI.	The Nizam's Guaranteed State	332'32	364'07	3,91,80,781	1,17,901	1,07,619	—	10,16,128	4,01,96,909
XXVII.	The Gaekwar's Petlad	13'35	15'12	7,09,375	52,612	46,453	—	10,393	7,12,768
	Total	402'66	446'11	4,58,10,233	1,13,769	1,02,688	—	10,36,919	4,68,47,162
LINES OWNED BY NATIVE STATES AND WORKED BY STATE RAILWAY AGENCY.									
XXIX.	Rajpura-Bhatinda	107'94	122'84	66,79,513	61,883	54,377	—	47,423	67,26,941
XXX.	Jammu and Kashmir (Native State Section).	15'92	20'53	9,56,327	60,071	46,582	—	—	9,56,327
	Total	123'86	143'37	76,35,840	61,649	53,260	—	47,423	76,83,268
	Total Standard Gauge	10,568'40	13,701'17	1,71,70,85,726	1,60,971	1,24,279	70,24,567	4,25,90,428	1,76,67,00,721
Metre Gauge.									
STATE LINES WORKED BY COMPANIES.									
XXXIII.	Bengal and North Western:— Tirhoot section	341'80	393'55	2,40,73,799	70,432	61,171	5,45,095	2,83,939	2,40,02,833
	Company's Section	414'50	468'50	(h) 2,63,80,406	63,658	57,549	15,41,500	4,33,174	(h) 2,83,61,080
XXXIV.	Rohilkund and Kumaon (Lucknow-Bareilly Section).	222'05	244'56	(i) 81,56,236	36,732	33,351	64,177	1,68,128	(i) 83,88,541
XXXV.	Rajputana-Malwa	1,674'02	1,930'28	12,65,57,851	75,601	65,565	—	43,57,728	13,09,15,679
XXXVI.	Palanpur-Deesa	17'28	18'13	3,63,963	21,062	20,075	—	—	3,63,963
XXXVII.	Southern Mahratta	1,043'70	1,151'48	9,31,99,928	89,298	80,943	—	13,71,734	9,45,71,662
XXXVIII.	Guntakal-Mysore Frontier	119'50	129'10	58,32,085	48,804	45,175	—	7,721	58,36,806
XXXIX.	Southern Mahratta (Mysore Section)	(j) 296'00	(j) 321'72	(j) 1,42,04,025	48,189	44,337	—	3,78,192	(j) 1,46,49,217
XL.	South Indian	(k) 1,041'51	(k) 1,159'05	(k) 7,30,20,233	70,116	62,973	—	33,04,810	(k) 7,63,31,043
	Total	5,170'36	5,800'92	27,18,60,516	71,922	64,037	21,50,772	1,03,05,426	28,43,16,714

(a) From Statement No. 25, pages 126 to 128.

(b) Excluding portion of the old Quetta loop (98'68 miles) which is under reconstruction on a new alignment, but including 6'13 miles (Meean Meer chord and Ferozepore cantonment to Hossainwala) used for military traffic only.

(c) The decrease as compared with last year's report is due to the transfer of the outlay on the gradient improvement works, Jhelum to Rawalpindi, to the Mari-Attock Railway.

(d) Calculated on 2,524'17 miles, including 98'68 miles of the Quetta loop now under reconstruction on a new alignment.

(e) Calculated on 3,109'37 miles.

(f) Including the Pātri branch, the State outlay (Rs. 8,08,405) on which was met from the Civil Works grant. The capital outlay shown in this table is inclusive of this amount.

(g) Including Rs. 5,76,918 on account of interest on capital during construction.

(h) The decrease as compared with last year's report is due to certain credits.

(i) Including interest on capital during construction (Rs. 10,30,014).

(j) Including Rs. 46,761 on account of interest on capital during construction.

(k) The decrease as compared with the last year's report is due to the figures relating to the Yesvantpur-Dolballapur and Mysore-Nanjangud sections having now been recorded separately, vide Nos. LIII and LIV.

(l) The decrease as compared with the last year's report is due to the separation of the figures of the Dharmavaram-Guntakal section, vide No. XXXVIII.

STATEMENT No. 16—concluded.

CAPITAL OUTLAY ON OPEN LINES OF RAILWAY on the 31st December 1893, and the Average Cost per Mile excluding Branches and Extensions of the Open System still under Construction—concluded.

Serial No.	Railway.	Length of Line Open on the 31st December 1893. (From Statement No. 24, pages 126 to 128).	Total Length of Single Track, including Sidings, on the 31st December 1893. (a)	Capital Outlay on Open Line to the 31st December 1893, on Final Heads, exclusive of Steamboat Service and Suspense.	Average Cost, exclusive of Steamboat Service and Suspense.		Outlay on Steamboat Service to the 31st December 1893.	Amount of Debit of Suspense (open line) on 31st December 1893.	Total Capital Outlay on Open Line to the 31st December 1893, including Steamboat Service and Suspense (see also Statement No. 19).
					Per mile Open.	Per mile of Single Track, including Sidings.			
	<i>Metre Gauge—cont.</i>	Miles.	Miles.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
	STATE LINES WORKED BY THE STATE.								
XLIII.	Eastern Bengal (State)—Northern and Behar Sections (including the Kaunia-Dharla, 2' 6" gauge Branch).	478' 04	555' 89	3,86,23,524	80,796	69,491	9,35,441	—	3,95,58,965
	Dacca Section	85' 92	99' 55	66,99,873	77,978	67,302	3,122	—	67,02,995
XLIV.	Burma (State)	729' 89	847' 58	6,14,45,754	84,185	72,496	6,49,723	11,04,577	6,32,00,054
	Total	1,293' 85	1,503' 02	10,67,69,151	82,521	71,036	15,88,286	11,04,577	10,94,62,054
	ASSISTED COMPANIES.								
XLVI.	Deoghur	4' 79	5' 41	2,86,179	59,745	52,898	—	1,185	(b) 2,87,364
XLVII.	Rohilkund and Kumaon (Company's Section).	53' 92	58' 51	20,77,538	38,530	35,507	—	4,742	20,82,280
XLVIII.	Bengal Doocars	32' 25	37' 48	(c) 17,42,623	54,035	46,495	9,590	72,561	(c) 18,24,774
XLIX.	Dibru-Sadiya	77' 50	86' 38	69,88,468	90,174	80,904	22,248	1,59,846	71,70,562
	Total	168' 46	187' 78	1,10,94,898	65,860	59,084	31,838	2,38,334	1,13,64,980
	LINE OWNED BY NATIVE STATES AND WORKED BY COMPANIES.								
	The Gaekwar's Mehsana	92' 63	104' 27	30,26,752	32,676	29,028	—	—	30,26,752
LI.	Kolhapur	29' 07	30' 77	23,19,379	79,786	75,378	—	2,308	(b) 23,21,687
LII.	Yesvantpur-Mysore Frontier	51' 35	55' 22	23,77,411	46,298	43,053	—	12,091	23,89,502
	Mysore-Nanjangud	15' 25	16' 25	5,92,144	38,829	36,440	—	26,407	6,18,551
	Total	188' 30	206' 51	83,15,686	44,162	40,268	—	40,806	83,56,492
	LINE OWNED AND WORKED BY NATIVE STATES.								
LIII.	Jodhpore-Bickaneer—Jodhpore Section	320' 50	320' 50	64,24,467	20,045	19,498	—	50,144	64,74,611
	Bickaneer Section	43' 50	44' 50	9,65,771	22,202	21,703	—	—	9,65,771
LIV.	Bhavnagar-Gondal-Junagarh-Porbandar.	353' 65	375' 10	1,68,84,909	(d) 51,299	(d) 46,000	—	3,43,951	(b) 1,72,28,860
	Jetalsar-Rajkot	46' 23	48' 97	14,33,390	31,006	29,271	—	2,203	14,35,593
	Total	743' 88	798' 07	2,57,08,537	34,770	32,541	—	3,46,298	2,61,04,535
	FOREIGN LINES.						(e)		
LV.	West of India Portuguese	51' 00	62' 85	1,34,74,804	2,64,212	2,14,396	25,30,127	2,69,885	(b) 1,62,74,816
LVI.	Pondicherry	7' 80	9' 62	5,68,543	72,890	59,100	—	—	5,68,543
	Total	58' 85	72' 47	1,40,43,347	2,38,832	1,93,792	25,30,127	2,69,885	1,68,43,359
	Total metre gauge	7,623' 65	8,574' 77	53,77,92,045	70,584	62,777	63,01,023	1,23,55,326	55,64,48,394
	SPECIAL GAUGES.								
	STATE LINE WORKED BY THE STATE.								
	Jorhat (2' 0")	28' 00	29' 80	7,38,913	27,997	26,306	—	15,767	7,99,680
	ASSISTED COMPANY.								
LVII.	Darjeeling-Himalayan (2' 0")	51' 00	53' 50	30,87,337	60,144	57,333	—	104,886	31,72,223
	LINE OWNED BY NATIVE STATE AND WORKED BY COMPANY.								
LVIII.	The Gaekwar's Dabhoi (2' 6")	71' 66	76' 57	(b) 18,25,793	25,479	23,845	—	17,283	(b) 18,43,076
	LINE OWNED BY NATIVE STATE AND WORKED BY STATE RAILWAY AGENCY.								
LIX.	Cooch Behar (2' 6")	22' 12	23' 26	(f) 6,34,742	28,695	27,289	—	30,430	(f) 6,65,172
	LINE OWNED AND WORKED BY NATIVE STATE.								
LXI.	Morvi (2' 6")	94' 00	98' 00	21,25,059	22,613	21,690	—	31,706	21,57,365
	Total special gauges	266' 78	281' 13	84,37,444	31,627	30,013	—	2,00,072	86,37,516
	Total of all railways	18,458' 83	22,567' 07	2,26,33,15,215	1,21,092	99,863	1,33,25,590	5,51,46,826	2,33,17,86,831

(a) From Statement No. 25, pages 126 to 128.

(b) The decrease as compared with the last year's report is due to certain credits.

(c) Including Rs. 44,593 on account of interest on capital during construction.

(d) Calculated on the mileages of the home line, viz., 329' 15 miles and 367' 06 miles respectively.

(e) Harbour charges.

(f) Including Rs. 2,454 on account of loss on working.

N.B.—The outlay against the East Indian, North Western (State), Oudh and Rohilkhand (State), Eastern Bengal (State), and South Indian Railways represents the rupee expenditure on open lines of railway, excluding branches and extensions of the open system under construction, incurred by companies up to date of transfer of the lines to the State, plus the expenditure since incurred by Government. The figures will not agree with those shown in Statement No. 10 in this chapter, where premia on share capital, &c., at time of purchase and outlay on lines under construction are included.

CHAPTER VII.

MAIN RESULTS OF WORKING AND REVENUE STATISTICS.

The main results of working of all railways during 1892 and 1893 are compared in Statement No. 18 on pages 102 and 103.

2. * *Mean Mileage Worked and Capital Outlay.*—The total mean length of railways worked during 1893 was 18,207 miles as compared with 17,677 miles worked during the previous year. The total capital outlay,* including steamboat service and suspense accounts, on the mileage open to 31st December 1893, amounted to Rs. 2,33,17,86,631 against Rs. 2,27,29,99,502 at the end of the previous year.

3. *Gross Earnings.*—The gross earnings from all sources showed an increase of 3·68 per cent., the earnings under coaching having risen from Rs. 7,74,43,958 in 1892 to Rs. 8,19,41,321 in 1893, and under goods from Rs. 14,77,52,480 to Rs. 15,21,62,798, while the earnings from steamboat service and miscellaneous sources decreased from Rs. 70,96,095 to Rs. 67,38,173.

The gross earnings per mean mile worked per week were Rs. 254·38 against Rs. 252·72 in 1892.

4. *Coaching Traffic.*—The total number of passengers booked showed an increase of 6·38 per cent. as compared with the number booked in 1892. The passenger earnings increased by 5·56 per cent. with an increase in the passenger unit-mileage of 6·34 per cent. The number of passengers carried per mile was 307,661 as compared with 297,999 in 1892. Of the total number carried, the lower classes constituted 97·41 per cent., the second class having been 2·21 per cent. and the first class only 0·38 per cent.

The average distance travelled by each first class passenger was 77·18 miles against 77·32 miles in the previous year, and the amount paid was pies 12·54 against pies 12·52. In the second class, the average distance travelled was 48·28 miles against 50·10 miles, and the amount paid 5·15 pies against 4·98 pies; while in the lower classes the average distance travelled was 41·04 miles against 41·70 miles, and the amount paid was 2·35 pies against 2·37 pies.

Under other coaching traffic there was an increase of Rs. 6,55,252, or 7·87 per cent.

The increase in the earnings from passengers was due to the increased mileage worked and to a general development of traffic.

5. *Goods Traffic.*—The total tonnage of goods lifted showed an increase of 9·54 per cent. as compared with 1892. The total ton-mileage increased 4·53 per cent. and the earnings 2·98 per cent. The number of tons of goods carried per mile was 243,042 as compared with 239,492 tons in 1892.

The increase in earnings from goods traffic notwithstanding a shorter average lead—miles 153·40 as compared with miles 160·75 in the previous year—was due to the increased mileage worked and to better harvests. There was a considerable decrease in the wheat traffic due to a falling off in the demands from Europe.

6. *Working Expenses.*—The total working expenses amounted to Rs. 11,34,77,280 against Rs. 10,90,34,766 in 1892, the per-centage on gross earnings being 47·12 as compared with 46·94 in 1892.

7. *Net Earnings and Statistical Return on Capital.*—The net earnings derived from all railways amounted to Rs. 12,73,65,012 as compared with Rs. 12,32,57,767 in 1892 giving a percentage per annum on the total capital outlay* on open lines of 5·46 as compared with 5·42.

* The capital outlay here referred to is that shown in Chapter VI., Statement No. 16.

8. *Results per Train-Mile.*—The following table shows the gross earnings, working expenses, and net earnings during 1893, and what these amount to per train-mile, excluding steamboat, for all railways under the following grouping :—

	Guaranteed Railways.	State Lines leased to Companies.	State Railways (Com- mercial).	State Railways (Military).	State Railways worked by Companies.	Assisted Companies.	Native States.	Foreign Lines.
	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
Standard gauge lines :								
Gross earnings -	6,44,14,822	1,16,60,333	4,24,41,177	31,22,027	5,04,56,870	14,81,559	43,14,110	—
Gross earnings per train-mile.	4.30	3.79	3.53	2.05	5.10	2.80	4.10	—
Working expenses -	3,13,95,743	63,82,712	2,27,46,670	37,19,549	1,37,26,951	7,07,915	23,19,067	—
Working expenses per train-mile.	2.10	2.07	1.89	2.44	1.40	1.34	2.24	—
Net earnings -	3,30,19,079	52,77,621	1,96,94,507	-5,97,522	3,67,29,919	7,73,644	19,95,043	—
Net earnings per train-mile.	2.20	1.72	1.64	-0.39	3.70	1.46	1.86	—
Metre gauge lines :								
Gross earnings -	—	81,41,997	1,15,34,347	—	3,30,24,011	35,45,466	35,77,829	4,88,487
Gross earnings per train-mile.	—	2.56	3.27	—	3.12	3.07	3.20	3.36
Working expenses -	—	48,79,079	65,52,462	—	1,53,86,328	15,59,414	18,94,508	3,73,499
Working expenses per train-mile.	—	1.53	1.86	—	1.45	1.35	1.69	2.57
Net earnings -	—	32,62,918	49,81,885	—	1,76,37,683	19,86,052	16,83,321	1,14,988
Net earnings per train-mile.	—	1.03	1.41	—	1.67	1.72	1.51	0.79
Special gauge lines :								
Gross earnings -	—	—	69,810	—	—	6,34,180	5,79,317	—
Gross earnings per train-mile.	—	—	3.12	—	—	4.50	2.31	—
Working expenses -	—	—	55,373	—	—	3,51,387	3,04,984	—
Working expenses per train-mile.	—	—	2.47	—	—	2.49	1.22	—
Net earnings -	—	—	14,437	—	—	2,82,793	2,74,333	—
Net earnings per train-mile.	—	—	0.65	—	—	2.01	1.09	—

In the previous year the results per train-mile were—

Standard gauge lines :								
Gross earnings per train-mile.	4.62	3.66	3.58	2.47	5.09	2.70	4.09	—
Working expenses per train-mile.	2.15	2.03	1.79	3.24	1.46	1.29	2.15	—
Net earnings per train-mile.	2.47	1.63	1.79	-0.77	3.63	1.41	1.94	—
Metre gauge lines :								
Gross earnings per train-mile.	—	2.45	3.34	—	3.00	3.08	3.06	2.69
Working expenses per train-mile.	—	1.66	1.64	—	1.38	1.44	1.84	2.71
Net earnings per train-mile.	—	0.79	1.70	—	1.62	1.64	1.22	-0.02
Special gauge lines :								
Gross earnings per train-mile.	—	—	2.45	—	—	4.46	2.20	—
Working expenses per train-mile.	—	—	1.45	—	—	2.59	1.26	—
Net earnings per train-mile.	—	—	1.00	—	—	1.87	0.94	—

9. *Earnings per Mile per Week and Ratio of Working Expenses to Gross Earnings.*—The following table shows the gross earnings per mean mile worked per week and the per-centage of working expenses to gross earnings on the principal railways for 1892 and 1893 :—

The following table shows the gross earnings per mean mile worked per week and the per-centage of working expenses to gross earnings on the principal railways for 1892 and 1893 :—

1892 and 1893.		Previous Year.		1893.	
Serial Number.	Railways (including Branches and Leased Lines).	Gross Earnings per Mean Mile worked per Week (excluding Steamboat).	Per-centage of Working Expenses on Gross Earnings (excluding Steamboat).	Gross Earnings per Mean Mile worked per Week (excluding Steamboat).	Per-centage of Working Expenses on Gross Earnings (excluding Steamboat).
<i>Standard Gauge.</i>					
STATE LINES WORKED BY COMPANIES.		Rs.		Rs.	
I.	East Indian (a) - - - -	580	28·61	584	(b) 27·36
II.	Bengal-Nágpur - - - -	141	50·55	144	49·17
III.	Indian Midland - - - -	180	61·63	129	62·72
STATE LINES WORKED BY THE STATE.					
IX.	North-Western (State) (c) - -	208	64·05	229	(d) 66·42
XI.	Oudh and Rohilkhand (State) - -	237	41·28	239	42·44
XII.	Eastern Bengal (State) (e) - -	520	41·41	529	(f) 40·87
LINES WORKED BY GUARANTEED COMPANIES.					
XVIII.	Great Indian Peninsula - - - -	525	50·28	501	53·57
XIX.	Bombay, Baroda, and Central India (g) -	594	42·92	630	36·55
XX.	Madras - - - -	221	55·40	241	48·39
LINE OWNED BY NATIVE STATE AND WORKED BY COMPANY.					
XXVI.	The Nizam's Guaranteed State -	151	52·35	136	53·08
<i>Metre Gauge.</i>					
STATE LINES WORKED BY COMPANIES.					
XXXIII.	Bengal and North-Western :—				
	Tirhoot Section - - - - }	120	40·07	123	(h) 42·57
	Company's Section - - - - }	257	41·01	259	41·12
XXXV.	Rajputana-Malwa (i) - - - -	83	68·74	99	59·68
XXXVII.	Southern Mahratta - - - -	137	62·89	149	61·12
XL.	South Indian - - - -				
STATE LINES WORKED BY THE STATE.					
XLIII.	Eastern Bengal (State):—				
	Northern and Behar Sections, including the Kaunia-Dharla (2' 6" gauge) Branch.	165	43·50	182	(k) 41·77
	Dacca Section - - - -	85	64·40	96	62·41
XLIV.	Burma (State) - - - -	197	51·58	178	(l) 65·80
LINES OWNED AND WORKED BY NATIVE STATES.					
LV.	Jodhpore-Bickaneer :—				
	Jodhpore section - - - -	74	44·14	52	47·83
	Bickaneer section - - - -	34	67·47	30	61·43
LVI.	Bhávánagar-Gondal-Junágarh-Porbandár	91	72·25	117	56·22

- [illegible]

10. *Earnings per mean mile worked per week in five-yearly periods.*—The gross earnings of the chief railways per mean mile worked per week (excluding steam-boat earnings) in five-yearly periods from the commencement up to the year 1893, are given in the following table:—

Serial Number.	Railways (including Branches and Leased Lines).	1853.	1858.	1863.	1868.	1873.	1878.	1883.	1888.	1893.
<i>Standard Gauge.</i>										
STATE LINES WORKED BY COMPANIES.		Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
I.	East Indian - - - - -	—	279	222	346	382	499	585	525	584(a)
II.	Bengal-Nágpur - - - - -	—	—	—	—	—	—	170	164	144
III.	Indian Midland - - - - -	—	—	—	—	—	—	—	99	129
STATE LINES WORKED BY THE STATE.										
IX.	North-Western (State) - - - - -	—	—	171	112	154	193	228	202	229(b)
XI.	Oudh and Rohilkhand (State) - - - - -	—	—	—	120	56	163	192	197	239
XII.	Eastern Bengal (State) (c) - - - - -	—	—	130	259	331	524	*288	*283	529
LINES WORKED BY GUARANTEED COMPANIES.										
XVIII.	Great Indian Peninsula - - - - -	119	173	175	357	282	394	467	526	501
XIX.	Bombay, Baroda, and Central India - - - - -	—	—	138	287	260	298	497	532	630(d)
XX.	Madras - - - - -	—	93	110	181	157	148	148	195	241
LINE OWNED BY NATIVE STATE AND WORKED BY COMPANY.										
XXVI.	The Nizam's Guaranteed State - - - - -	—	—	—	—	—	126	137	118	136
<i>Metre Gauge.</i>										
STATE LINES WORKED BY COMPANIES.										
XXXIII.	Bengal and North-Western:—									
	Tirhoot Section - - - - -	—	—	—	—	—	108	103	123	} 123
	Company's Section - - - - -	—	—	—	—	—	—	—	102	
XXXV.	Rajputana-Malwa (e) - - - - -	—	—	—	—	82	129	197	215	259
XXXVII.	Southern Mahratta - - - - -	—	—	—	—	—	—	—	86	} 99
XXXIX.	Southern Mahratta (Mysore Section) - - - - -	—	—	—	—	—	—	67	79	
XI.	South Indian - - - - -	—	—	74	90	120	102	149	158	149
STATE LINES WORKED BY THE STATE.										
XLIII.	Eastern Bengal (State):—									
	Northern and Behar Sections, including the Kaunia-Dharila (2' 6" gauge) Branch. } (f)	—	—	—	—	—	—	—	—	} 182 96
	Dacca Section - - - - -	—	—	—	—	—	—	—	—	
XLIV.	Burma (State) - - - - -	—	—	—	—	—	115	187	178	178
LINES OWNED AND WORKED BY NATIVE STATES.										
LIV.	Jodhpore-Bickaneer:—									
	Jodhpore Section - - - - -	—	—	—	—	—	—	42	56	52
	Bickaneer Section - - - - -	—	—	—	—	—	—	—	—	30
LVI.	Bhánagar-Gondal-Junágarh-Porbandar - - - - -	—	—	—	—	—	—	89	109	117(g)

(a) Excluding the Delhi-Umballa-Kalka and the Tarkessur Railways.

(b) Excluding the Hyderabad-Umarkot and the Rájpura-Bhátinda Railways.

(c) Excluding the Bengal Central Railway, but including the Eastern Bengal (State) Railway metre gauge sections up to 1888.

(d) Excluding the Godhra-Rutlam, the Gaekwar's Potlád, and the Gaekwar's Dabhoi railways.

(e) Excluding the Palanpur-Deesa and the Gaekwar's Mehsána Railways.

(f) Included with the standard gauge section up to 1888.

(g) Excluding the Jetalsar-Rájkot Railway.

* The decrease here is apparently due to the amalgamation with the late Calcutta and South-Eastern, the Northern Bengal, and Dacca railways, on which the weekly earnings were small compared with those on the Eastern Bengal (State) railway.

11. *Capital Expenditure and General Results of Working.*—Including the steamboat service and capital* expenditure on suspense accounts, the total general results of working of all railways during 1893 were as follows:—

	Standard Gauge.	Metre Gauge.	Special Gauges.	Total.
Mileage open at end of year - Miles	10,568·40	7,623·65	266·78	18,458·83
Mileage of single track, including sidings - "	13,701·17	8,574·77	281·13	22,557·07
Mean mileage worked during the year - "	10,472·93	7,485·08	249·18	18,207·19
*Total capital outlay on open lines - Rs.	1,76,67,00,721	55,64,48,394	86,37,516	2,33,17,86,631
†Average cost per mile open - "	1,60,971	70,584	31,627	1,21,992
†Average cost per mile of single track, including sidings - "	1,24,279	62,777	30,013	99,863
Gross earnings - "	17,82,77,906	6,12,79,626	12,84,761	24,08,42,293
Working expenses - "	8,14,41,385	3,13,24,150	7,11,744	11,34,77,279
Percentage of working expenses on gross earnings - "	45·68	51·12	55·40	47·12
Net earnings - "	9,61,36,521	2,99,55,476	5,73,017	12,73,65,014
Percentage of net earnings on total capital cost of open line - "	5·48	5·38	6·63	5·46

12. *Net Earnings and Percentage on Capital Outlay.*—Taking the figures as grouped in Statement No. 29 on pages 142 to 145 for the standard and metre gauge railways only, it will be seen that the net earnings of the State lines amounted in 1893 on the standard gauge (the East Indian Railway excepted) to Rs. 2,50,47,781, giving a return of 2·99 per cent. on a total capital expenditure of Rs.83,72,44,616, and on the metre gauge to Rs. 2,75,06,488, giving a return of 5·60 per cent. on a total capital expenditure of Rs. 49,12,88,470. Including the East Indian Railway, the net earnings of the State lines (standard and metre gauge) were Rs. 8,86,86,167, or 5·23 per cent. on a total capital outlay of Rs. 1,69,64,37,325.

The net earnings of the East Indian Railway alone amounted to Rs. 3,61,31,898, being at the rate of 9·82 per cent. on a total capital expenditure of Rs. 36,79,04,239. The surplus profits after paying annuity and interest charges were Rs. 85,20,623, of which sum one-fifth, or Rs. 17,04,125, was paid over to the working company as its share under the contract.

The net earnings of the lines classed as "State lines worked by the State" were on the standard gauge Rs. 1,92,85,644 or 3·13 per cent. on a total capital outlay of Rs. 61,62,22,183, and on the metre gauge Rs. 49,00,157, or 4·48 per cent. on a total capital outlay of Rs. 10,94,62,014.

The net earnings of the guaranteed lines, all of which are on the standard gauge, amounted to Rs. 3,30,19,079, giving a return of 6·67 per cent. on a total capital outlay of Rs. 49,47,49,566.

The net earnings of the lines in the hands of assisted companies were on the standard gauge Rs. 7,73,644, being at the rate of 4·48 per cent. on a total capital outlay of Rs. 1,72,71,880, and on the metre gauge Rs. 6,86,435, being at the rate of 3·48 per cent. on a total capital outlay of Rs. 1,97,53,521.

The net earnings derived by the native States lines amounted on the standard gauge to Rs. 18,64,119, giving a return of 3·76 per cent. on a total capital outlay of Rs. 4,95,30,420, and on the metre gauge to Rs. 15,97,484, giving a return of 5·48 per cent. on a total capital outlay of Rs. 2,91,31,587.

13. *Results of working the Guaranteed Railways.*—Statements relating to guaranteed railway transactions are given on pages 108 to 110. Where the transactions are stated in these statements in sterling, conversions from Indian currency have been made at the contract rates of exchange. On this basis the guaranteed lines are shown (*vide* Statement No. 22, page 109) to have returned a net revenue of 3,046,225*l.* The guaranteed interest is 2,157,007*l.*, and the net earnings are shown to be in excess of guaranteed interest by 889,218*l.* This, however, does not represent the true result, as the figures do not take into account the heavy loss by exchange in connection with the guaranteed interest paid in England.

* The capital expenditure here referred to is that shown in Chapter VI., Statement No. 16.

† Excluding steamboat and suspense.

The actual results to the State from the working of the guaranteed railways, as well as of lines leased to or purchased from guaranteed companies and worked by those companies for the year 1893, are given in Statement No. 23 on pages 109 and 110. This statement also shows the sterling dividends earned by the companies and the return on the capital expenditure of these lines from the net earnings, less contributions from the general revenues required to meet liabilities incurred under the terms of the contracts.

14. *General results of Working.*—From the statement on pages 104 to 107, which summarises the results of working of the principal standard and metre gauge lines, it will be observed that during 1893 the average gross earnings per total train-mile were Rs. 4·20 on the standard gauge and Rs. 3·12 on the metre gauge, the highest on the standard gauge being Rs. 6·21 on the Bombay, Baroda and Central India Railway, and the lowest Rs. 3·31 on the Oudh and Rohilkhand (State) Railway. The highest on the metre gauge was Rs. 3·54 on the Bhávnagar-Gondal-Junágarh-Porbandar Railway, and the lowest Rs. 2·07 on the Bickaneer section of the Jodhpore-Bickaneer Railway.

The percentage of working expenses on gross earnings ranged on the standard gauge from 27·44 on the East Indian Railway to 66·53 on the North-Western (State) Railway, and on the metre gauge from 41·12 on the Rajputana-Malwa Railway to 66·64 on the Burma (State) Railway, the average of the standard gauge lines being 45·61 and of the metre gauge 50·62.

The average working expenses per total train-mile were Rs. 1·92 on the standard gauge and Rs. 1·58 on the metre gauge, the highest being Rs. 2·40 on the Nizam's Guaranteed State Railway, standard gauge, and Rs. 2·30 on the Burma (State) Railway, metre gauge.

The average coaching earnings per coaching train-mile were Rs. 3·25 on the standard gauge and Rs. 3·11 on the metre gauge, the highest on the standard gauge being Rs. 4·15 on the East Indian Railway, and the lowest Rs. 2·48 on the Great Indian Peninsula Railway; the highest on the metre gauge was Rs. 4·03 on the Burma (State) Railway, and the lowest Rs. 1·57 on the Bickaneer section of the Jodhpore-Bickaneer Railway.

The average number of passengers carried in a passenger train was 213·03 on the standard gauge and 238·30 on the metre gauge, the highest on the standard gauge being 289·84 on the Madras Railway, and the lowest 149·20 on the Great Indian Peninsula Railway; the highest on the metre gauge was 257·24 on the South Indian Railway, and the lowest 128·23 on the Bickaneer section of the Jodhpore-Bickaneer Railway.

The lowest average cost on the standard gauge of hauling one passenger unit one mile was 0·60 pie on the East Indian Railway, on which line the average sum received for this work was 2·70 pies. On the metre gauge the lowest average cost of hauling a passenger one mile was 0·68 pie on the Rajputana-Malwa Railway, the average receipts per passenger on this line being 2·11 pies.

The average distance travelled by passengers was on the standard gauge 43·69 miles and on the metre gauge 40·21 miles.

The average goods earnings per goods train-mile were Rs. 4·72 on the standard gauge and Rs. 2·95 on the metre gauge, the highest on the standard gauge being Rs. 8·40 on the Bombay, Baroda, and Central India Railway, and the lowest Rs. 3·08 on the Oudh and Rohilkhand (State) Railway; the highest on the metre gauge was Rs. 3·52 on the Rajputana-Malwa Railway, and the lowest Rs. 1·25 on the Dacca section of the Eastern Bengal (State) Railway.

The lowest average cost of hauling one ton of goods one mile was 1·52 pies on the East Indian Railway, standard gauge, and 2·48 pies on the Bengal and North-Western Railway, metre gauge; the average sums received on these lines for doing this work being 5·24 pies and 5·62 pies respectively.

The average distance over which a ton of goods was hauled was on the standard gauge 167·12 miles and on the metre gauge 133·81 miles.

15. *Financial results of working State Lines by State Agency excluding Non-Commercial Sections.*—The financial results of the State lines worked by State agency (excluding the Pishin section and the Sind-Sagar and Kushálgarh branches of the North-Western (State) Railway for 1892 and 1893 are summarised in the following table:—

Railway.	Mean mileage worked. (From statement No. 25, pages 126 to 128.)	Gross earnings.	Working expenses.	Net earnings.	Percentage of working expenses on gross earnings.	Percentage of net earnings on total capital outlay, as shown in Chapter VI., Statement No. 10.
1892.						
STANDARD GAUGE.	Miles.	Rs.	Rs.	Rs.		
North Western* (State) -	1,590·94	2,84,00,232	1,30,05,865	1,03,94,367	55·58	3·22
Hyderabad-Umarkot -	21·90	33,206	35,155	—1,949	105·87	...
Oudh and Rohilkund (State) -	692·55	85,42,837	35,26,507	50,16,330	41·28	4·81
East Bengal (State) -	248·72	70,24,895	31,13,317	39,11,578	44·32	5·75
METRE GAUGE.						
Eastern Bengal (State)— Northern and Behar sections (including the Kaunia-Dharila 2' 6" gauge, branch).	444·15	41,50,631	19,64,072	21,86,559	47·32	5·60
Dacca section -	85·92	3,80,920	2,45,330	1,35,590	64·40	2·02
Burma (State) -	691·81	71,00,618	37,14,531	33,86,087	52·37	5·10
Total -	8,775·99	5,06,38,339	2,56,04,777	2,50,28,562	50·57	4·11
1893.						
STANDARD GAUGE.						
North Western -	1,586·76	2,61,10,873	1,57,18,740	1,03,92,133	60·20	3·18
Hyderabad-Umarkot -	58·91	1,30,817	1,14,345	16,472	87·41	0·99
Oudh and Rohilkund (State) -	702·53	87,15,927	36,98,874	50,17,053	42·44	4·73
Eastern Bengal (State) -	248·92	70,69,485	30,92,012	39,77,473	43·74	5·82
East Coast (State) -	81·29	2,97,123	2,51,689	45,484	84·69	0·17
METRE GAUGE.						
Eastern Bengal (State)— Northern and Behar sections (including the Kaunia-Dharila, 2' 6" gauge branch).	444·62	45,53,672	20,56,885	24,96,787	45·17	6·31
Dacca section -	85·92	4,27,990	2,67,112	1,60,878	62·41	2·40
Burma (State) -	725·33	67,22,507	44,80,015	22,42,492	66·64	3·19
Total -	3,934·28	5,40,28,394	2,96,79,622	2,43,48,772	54·93	3·77

16. The following table exhibits the capital outlay and revenue transactions for the commercial and military sections of the North-Western (State) Railway proper for 1893:—

	1892.			1893.		
	Commercial section.	Military section.	Total.	Commercial section.	Military section.	Total.
Total capital outlay†	Rs. 32,29,05,035	Rs. 12,13,82,153	Rs. 44,42,87,188	Rs. 32,63,70,688	Rs. 42,16,25,915	Rs. 44,79,96,603
Mean mileage worked	Miles. 1,590·94	Miles. 837·42	Miles. 2,428,36	Miles. 1,586·76	Miles. 846·52	Miles. 2,433·28
Train mileage	6,674,261	1,219,699	7,893,960	7,415,442	1,320,208	8,735,650
Gross earnings	Rs. 2,34,00,232	Rs. 30,35,433	Rs. 2,64,35,665	Rs. 2,61,10,873	Rs. 31,57,859	Rs. 2,92,62,732
Working expenses	1,30,05,865	39,78,771	1,69,84,636	1,57,18,740	37,52,349	1,94,71,089
Net earnings	1,03,94,367	—9,43,338	94,51,029	1,03,92,133	—5,94,490	97,97,643
Percentage of working expenses on gross earnings.	55·58	131·08	64·25	60·20	118·83	66·53
Percentage of net earnings on total capital outlay.	3·22	—	2·13	3·18	—	2·19

* Excluding the military lines.

† As shown in Chapter VI., Statement No. 10.

17. The following statement shows the net earnings* on the principal railways and their percentage on the capital expenditure on open lines, including steamboat service but excluding suspense accounts, during the last five years :—

STATEMENT No. 17.

Serial Number.	Railway (including Branches and Leased Lines).	1889.		1890.		1891.		1892.		1893.	
		Net Earnings.	Percentage of Net Earnings per annum on Capital Expenditure.	Net Earnings.	Percentage of Net Earnings per annum on Capital Expenditure.	Net Earnings.	Percentage of Net Earnings per annum on Capital Expenditure.	Net Earnings.	Percentage of Net Earnings per annum on Capital Expenditure.	Net Earnings. (See also Statements Nos. 19 and 20.)	Percentage of Net Earnings per annum on Capital Expenditure.
	<i>Standard Gauge.</i>										
	STATE LINES WORKED BY COMPANIES.	Rs.		Rs.		Rs.	(a) (b)	Rs.	(b)	Rs.	
I.	East Indian - - -	2,91,14,970	8'28	2,95,24,548	8'39	3,67,75,515	9'84	3,67,77,114	9'52	5,69,05,542	8'70
II.	Bengal-Nagpur - - -	4,08,100	1'15	5,47,463	0'88	26,84,482	3'15	30,08,160	3'33	32,62,220	3'33
III.	Indian Midland - - -	5,72,276	0'71	5,27,114	0'62	15,73,034	1'79	19,08,541	2'15	18,83,372	2'00
	STATE LINES WORKED BY THE STATE.										
IX.	North-Western (State) - -	1,02,84,742	2'70	1,02,71,873	2'63	1,21,48,224	3'08	94,94,525	2'29	(c) 98,11,975	2'19
XI.	Oudh and Rohilkhand (State) -	42,04,070	4'66	37,54,478	4'15	49,42,459	5'40	50,16,550	5'54	50,17,053	4'78
XII.	Eastern Bengal (State) - -	41,50,936	7'75	39,02,260	7'08	45,53,168	7'78	39,11,578	6'85	(d) 39,77,473	5'82
	LINES WORKED BY GUARANTEED COMPANIES.										
XVIII.	Great Indian Peninsula - - -	1,78,91,615	6'67	1,90,22,952	7'05	2,32,50,798	8'07	2,06,60,284	7'14	1,85,21,832	6'29
XIX.	Bombay, Baroda, and Central India	75,41,080	8'16	74,23,195	7'99	82,25,120	8'80	81,30,059	8'67	(e) 65,78,043	9'87
XX.	Madras - - - - -	37,39,422	3'27	45,21,480	3'93	39,06,530	3'26	42,02,132	3'67	54,31,742	4'51
	LINE OWNED BY NATIVE STATE AND WORKED BY COMPANY.										
XXVI.	The Nizam's Guaranteed State -	7,82,839	3'17	10,55,908	2'76	12,86,559	3'25	13,53,300	3'86	15,76,671	3'07
	<i>Metro Gauge.</i>										
	STATE LINES WORKED BY COMPANIES.										
XXXIII.	Bengal and North-Western— Tirhoot Section - - -	9,78,246	4'73	25,73,304	5'28	29,77,841	6'01	30,17,000	5'86	30,07,027	5'65
	Company's Section - - -	10,53,964	4'09								
XXXV.	Rajputana-Malwa - - -	1,07,97,218	8'65	86,42,525	6'00	1,23,17,005	9'80	1,32,14,775	10'47	(f) 1,32,80,100	10'15
XXXVI.	Southern Mahratta - - -	11,71,512	1'23	12,24,073	1'17	20,73,557	1'91	18,53,156	1'68	31,53,380	2'62
XXXIX.	South Indian - - - - -	17,04,162	8'66	26,30,049	5'62	24,49,731	3'54	28,09,932	3'52	31,53,479	3'77
	STATE LINES WORKED BY THE STATE.										
XLIII.	Eastern Bengal (State)— Northern and Behar Sections (including the Kaunia-Dharila 2' 6" gauge Branch). - - -	19,59,095	8'16	20,35,441	8'42	20,21,320	5'45	21,86,559	5'77	24,96,787	6'31
	Dacca Section - - -	86,692	1'21	1,32,620	1'99	1,57,612	2'36	1,35,500	2'02	1,60,876	2'40
XLIV.	Burma (State) - - - - -	15,73,552	3'18	23,46,191	4'70	23,71,591	4'43	23,86,087	5'54	22,42,492	3'19
	LINES OWNED AND WORKED BY NATIVE STATES.										
LIII.	Jodhpore-Bikaner— Jodhpore Section - - -	1,92,258	5'45	1,96,192	5'63	3,54,364	8'03	5,28,541	11'11	4,33,895	6'70
	Bikaner Section - - -	—	—	—	—	2,724	0'19	24,904	2'63	25,735	2'66
LVI.	Bhavnagar-Gondal-Junagarh-Port- bandar. - - - - -	5,99,831	8'79	5,90,267	3'65	4,75,786	2'85	4,37,876	2'60	(g) 8,88,708	5'16

(a) A special contribution of Rs. 1,90,000 to the provident fund not taken into account in arriving at these figures.

(b) Including lines worked, except Amarsol-Chakardharpor section, Bengal-Nagpur Railway for first half 1891.

(c) Excluding the Hyderabad-Umarkot and the Rajputana-Bhatinda Railways.

(d) Excluding the Bengal Central Railway.

(e) Bombay, Baroda, and Central India Railway only.

(f) Rajputana-Malwa Railway only.

(g) Excluding the Jotabur-Rajkot Railway.

* The net earnings in this statement represent the difference between gross earnings and working expenses, including contribution to provident funds.

The capital expenditure on which the percentages for 1893 are calculated is that given in Chapter VI., Statement No. 10. The percentages for previous years are based on the statistical outlay which for 1893 is given in Chapter VI., Statement No. 16.

MAIN RESULTS of WORKING of all RAILWAYS for the Years ending

Pro- gressive Number.	Details.	Previous Year.*			1893.	
		Standard Gauge.	Metro Gauge.	Special Gauges.	Standard Gauge.	Metro Gauge.
1	Open mileage on the 31st December - Miles	10,196·59	7,327·11	244·86	10,568·40	7,628·65
2	Mean mileage worked during the year - "	10,201·39	7,225·23	250·10	10,472·93	7,485·08
†3	Capital outlay on open line, including steamboat service and suspense accounts - - - - - Rs.	1,72,28,41,051	54,23,42,659	79,15,792	1,76,67,00,721	55,64,48,394
4	Number of passengers booked - No.	83,577,278	43,014,450	796,308	88,454,834	46,245,635
5	Number of passengers booked per mean mile worked - - - - - "	8,193	5,953	3,184	8,446	6,178
6	Tonnage of goods booked - - - Tons	19,018,611	7,192,322	123,885	21,242,685	7,484,701
7	Tonnage of goods booked per mean mile worked - - - - - "	1,864	995	495	2,028	1,000
8	Passenger unit-miles and average distance travelled :—					
	1st class - - - { Unit-miles	30,599,444	7,117,017	(a) 192,690	32,169,373	7,464,043
	- - - { Av. distance	70·33	66·61	(a) 30·26	81·66	64·14
	2nd class - - - { Unit-miles	112,907,514	28,313,046	(a) 684,574	112,793,770	30,625,889
	- - - { Av. distance	49·52	50·49	(a) 31·94	48·60	47·41
	Intermediate or 3rd, and 4th or lowest classes - { Unit-miles	3,394,628,016	1,673,329,642	(a) 19,866,739	3,612,530,727	1,784,062,888
	- - - { Av. distance	41·95	39·51	(a) 25·85	42·13	39·22
	Total - - - { Unit-miles	3,538,134,974	1,708,769,705	20,744,003	3,757,493,870	1,822,152,820
	- - - { Av. distance	42·33	39·73	26·05	42·48	39·40
9	Passenger unit-miles per mean mile worked - - - - - Miles	346,829	236,499	82,943	358,782	243,438
10	Ton-mileage and average lead { Ton-miles of goods - - - { Av. lead	3,337,875,655	891,496,836	4,066,597	3,488,106,230	933,060,045
	- - - { Av. lead	175·51	123·95	32·82	164·20	124·66
11	Ton-mileage per mean mile worked - Tons	327,198	123,387	16,260	333,059	124,656
12	Train-miles - - - - - Miles	41,106,811	19,081,086	434,114	(b) 42,632,569	19,699,759
13	Train-miles per mean mile worked - No.	4,030	2,641	1,736	(b) 4,073	2,632
	Gross earnings :—					
14	Coaching { Passengers - - - Rs.	4,75,62,784	2,10,38,413	5,13,407	5,02,74,668	2,21,64,432
	- { Other coaching traffic - - "	65,83,686	16,71,659	74,009	70,43,154	18,59,978
	Total - - - - - "	5,41,46,470	2,27,10,072	5,87,416	5,73,17,822	2,40,24,410
15	Goods - - - - - "	11,46,07,085	3,24,78,134	6,67,961	11,64,83,875	3,50,11,118
16	Steamboat, telegraph, and miscel- laneous - - - - - "	45,44,442	25,31,776	19,877	44,76,209	22,44,097
	Total gross earnings - - - "	17,32,97,997	5,77,19,082	12,74,554	17,82,77,906	6,12,79,625
17	Gross earnings per mean mile worked per week - - - - - "	326·69	153·63	98·00	327·36	157·44
	Working expenses :—					
18	Maintenance - - - - - "	2,05,65,081	70,31,504	1,58,082	2,15,44,677	76,71,440
19	Locomotive - - - - - "	2,05,04,784	1,00,44,598	2,39,409	2,71,00,461	1,04,57,328
20	Carriage and waggon - - - "	71,78,531	21,72,450	76,472	75,07,993	26,61,465
21	Traffic - - - - - "	1,27,74,342	47,24,779	1,23,260	1,33,62,590	49,86,343
22	General - - - - - "	76,36,555	39,94,563	1,12,405	77,89,881	41,39,598
23	Steamboat, special, and miscel- laneous, and rent of leased lines - "	35,15,771	10,93,951	20,119	32,48,457	11,57,087
24	Contributions to provident fund - "	8,75,786	1,91,957	374	8,87,327	2,50,889
	Total - - - - - "	7,90,50,850	2,92,53,802	7,30,114	8,14,41,386	3,13,24,150
25	Percentage of working expenses on gross earnings - - - - - Per cent.	45·62	50·68	57·28	45·68	51·12
26	Net earnings - - - - - Rs.	9,42,47,147	2,84,66,180	5,44,440	9,68,36,520	2,99,55,475
27	Percentage of net earnings on total capital outlay† on open line, in- cluding suspense - - - - - Per cent.	5·47	5·25	6·97	5·48	5·38

* The figures in the column "Previous year" have been taken from the

† The capital outlay here referred to is that shown

No. 18.

the 31st December 1892 and the 31st December 1893.

Special Gauges.	Total of all Gauges.		Increase in 1893.	Percentage of Increase or Decrease.		Pro- gressive Number.	Remarks.
	Previous Year.*	1893.		Increase.	Decrease.		
266·78	17,768·56	18,458·83	690·27	3·88	—	1	} See also Statement No. 25, pages 126 to 128.
249·18	17,676·72	18,207·19	530·47	3·00	—	2	
86,87,516	2,27,29,99,502	2,33,17,86,631	5,87,87,129	2·59	—	3	See also Statement No. 16, pages 92 and 93.
819,978	127,388,036	135,520,447	8,132,411	6·38	—	4	See also Statement No. 26, pages 130 and 133.
3,291	7,207	7,443	236	3·27	—	5	See also Statement No. 27, pages 134 to 137.
119,343	26,334,818	28,846,729	2,511,911	9·54	—	6	
479	1,490	1,584	94	6·31	—	7	
(a) 223,001	37,909,151	39,856,507	1,947,356	5·14	—	} (a) Approximate figures. 8 See also Statement No. 28, pages 138 to 141.	(a) Approximate figures.
(a) 36·51	77·32	77·18	—0·14	—	0·18		
(a) 831,052	141,905,134	144,250,711	2,345,577	1·65	—		
(a) 39·27	50·10	48·28	—1·82	—	3·63		
(a) 20,934,734	5,087,824,397	5,417,528,349	329,703,952	6·48	—		
(a) 26·41	41·70	41·04	0·66	1·58	—		
21,988,877	5,267,638,682	5,601,635,567	333,996,885	6·34	—		
26·82	41·36	41·33	—0·03	—	0·07		
88,245	297,999	307,661	9,662	3·24	—	9	} See also Statement No. 28, pages 138 to 141.
3,953,479	4,233,439,088	4,425,119,754	191,680,666	4·53	—	10	
33·13	160·75	153·40	—7·35	—	4·57	11	
15,866	239,492	243,042	3,550	1·48	—	12	} See also Statement No. 29, pages 184 to 189.
414,367	60,621,961	(b) 62,746,695	2,124,734	3·50	—	13	
1,663	3,429	(b) 3,446	17	0·50	—	14	(b) Excluding the Calcutta Port Commissioners' Railway.
5,17,615	6,91,14,604	7,29,56,715	38,42,111	5·56	—	} See also Statements Nos. 26 and 29, pages 130 to 133, and 142 to 145 respectively.	See also Statements Nos. 26 and 29, pages 130 to 133, and 142 to 145 respectively.
81,474	83,29,354	89,84,606	6,55,252	7·87	—	15	
5,99,089	7,74,43,958	8,19,41,321	44,97,363	5·81	—	16	} See also Statements Nos. 27 and 29, pages 134 to 137, and 142 to 145 respectively.
6,67,805	14,77,52,480	15,21,62,798	44,10,318	2·98	—	17	
17,867	70,96,095	67,38,173	—3,57,922	—	5·04	18	} See also Statements Nos. 29 and 30, pages 142 to 145 and 146 to 149, respectively.
12,84,761	23,22,92,533	24,08,42,292	85,49,759	3·68	—	19	
99·15	252·71	254·38	1·67	0·66	—	20	
1,55,464	2,77,54,667	2,93,71,581	16,16,914	5·88	—	21	
2,19,633	3,67,88,791	3,77,77,422	9,88,631	2·69	—	22	
63,084	94,27,453	1,02,32,542	8,05,089	8·54	—	23	
1,28,366	1,76,22,381	1,84,77,299	8,54,918	4·85	—	24	
1,16,001	1,17,43,523	1,20,45,480	3,01,957	2·57	—	25	
26,084	46,29,834	44,31,628	—1,98,206	—	4·28	26	
3,112	10,68,117	11,41,328	73,211	6·85	—	27	
7,11,744	10,90,34,766	11,34,77,280	44,42,514	4·07	—	28	
55·40	46·94	47·12	0·18	—	—	29	
5,73,017	12,32,57,767	12,73,65,012	42,07,245	3·33	—	30	
6·63	5·42	5·46	0·04	—	—	31	

capital and revenue accounts and the analyses of working for 1892.
in Chapter VI., Statement No. 16.

STATEMENT

GENERAL RESULTS of the WORKING of the PRINCIPAL STANDARD and METRE

Pro- gressive Num- ber.	HEADINGS.	STATE LINES WORKED BY COMPANIES.			STATE LINES WORKED BY	
		I. East Indian.	II. Bengal-Nagpur.	III. Indian Midland. (d)	IX. North-Western State (f)	XI. Oudh and Rohilkhand. (State).
	<i>Standard Gauge.</i>					
1	Miles open on the 31st December 1892 - Miles	1,610'73	862'33	734'46	2,425'49	741'11
2	Total length of sidings - " "	424'17	95'66	98'71	527'39	110'27
3	Total length of single track, including sidings - " "	2,509'14	987'90	833'17	2,994'14	851'38
4	Mean mileage worked during the year - " "	(b) 1,634'97	859'76	(d) 753'78	(f) 2,449'20	702'53
5	Capital outlay on open line to the 31st December 1892, including steamboat service and suspense. Rs.	36,79,04,239	9,80,05,815	9,41,87,901	42,27,24,052	9,50,64,314
6	Capital outlay on open line to the 31st December 1892, exclusive of steamboat service and suspense. "	36,02,00,797	9,49,30,443	9,20,25,869	40,71,77,200	9,31,68,289
7	Average cost per mile of railway (a) - " "	2,23,028	1,10,086	1,25,297	1,61,311	1,25,715
8	Average cost per mile of single track, including sidings (a). - " "	1,43,555	99,093	1,10,453	1,30,952	1,09,432
9	Coaching earnings - " "	1,66,19,163	13,34,341	20,69,217	95,52,843	39,08,783
10	Goods earnings - " "	3,25,11,703	46,08,305	27,53,420	1,91,19,245	44,53,397
11	Gross earnings - " "	4,97,95,527	64,17,751	50,52,450	2,92,68,732	87,15,927
12	Gross earnings per mean mile worked per week, excluding steamboat earnings. - " "	584	144	129	229	239
13	Working expenses - " "	1,36,63,629	31,55,531	31,69,078	(g) 1,94,71,089	36,98,374
14	Working expenses per cent. of gross earnings - " "	27'44	49'17	63'72	66'53	42'44
15	Net earnings - " "	3,61,31,898	32,62,220	18,83,372	97,97,043	50,17,053
16	Net earnings per cent. on capital outlay - " "	9'82	3'33	1'95	2'32	5'23
17	Net earnings per cent. on paid up capital - " "	—	3'28	1'92	—	—
18	Passenger train-miles - Miles	4,007,137	412,818	681,239	3,276,881	1,182,612
19	Goods train-miles - " "	5,699,887	1,112,384	775,617	5,463,822	1,447,986
20	Total train-miles - " "	9,707,024	1,525,202	1,456,906	8,760,703	2,630,598
21	Coaching earnings per passenger train-mile - Rs.	4'15	3'23	3'04	2'93	3'31
22	Goods earnings per goods train-mile - " "	5'70	4'14	3'55	3'49	3'08
23	Gross earnings per train-mile - " "	5'13	4'21	3'47	3'34	3'31
24	Working expenses per train-mile - " "	1'41	2'07	2'13	2'22	1'41
25	Net earnings per train-mile - " "	3'72	2'14	1'29	1'12	1'90
26	Cost of train staff per train-mile - Annas	0'89	0'68	0'73	(h) 0'90	0'68
27	Average number of passengers in a passenger train. - No.	263'02	260'52	175'24	186'64	214'32
28	Average distance travelled by a passenger - Miles	66'10	48'92	67'73	54'30	44'76
29	Average number of tons in a goods train - Tons	208'86	110'30	100'85	123'02	108'94
30	Average distance over which a ton of goods was hauled. Miles	223'91	98'74	140'01	136'85	112'16
31	Average number of vehicles (excluding brake-vans)— In each passenger train - No.	13'99	13'80	11'00	13'21	10'59
32	In each goods train - " "	32'59	23'59	28'00	26'53	34'74
33	In each mixed train { Passenger carriages - " "	15'73	8'14	9'00	10'06	7'71
	{ Goods vehicles - " "	4'38	13'52	13'00	4'12	12'12
34	Number of passengers carried one mile - Unit-Miles	1,049,962,500	107,543,223	119,385,338	611,535,221	253,466,208
35	Number of tons of goods carried one mile - Ton-Miles	1,190,491,905	122,693,967	78,221,695	674,639,592	157,746,915
36	Average cost of hauling for one mile— One passenger unit - Pies	0'60	1'30	1'62	(h) 1'55	0'90
37	One ton of goods - " "	1'52	3'57	4'44	(h) 3'82	2'74
38	Average sum received for carrying for one mile— One passenger unit - Pies	2'70	2'08	2'87	2'60	2'70
39	One ton of goods - " "	5'24	7'21	6'76	5'44	5'42

(a) Excluding steamer service and suspense.

(b) Including 23·24 miles of the Eastern Bengal (State) Railway and 1 mile of the Rajputana-Malwa Railway worked over by the Company.

(c) Including the Bhopal-Itarsi Railway, except as regard items 16 and 77.

(d) Including 2·83 miles of the Rajputana-Malwa Railway, 1 mile of the Oudh and Rohilkhand (State) Railway, and 15'30 miles of the East Indian Railway, worked over by the Indian Midland Railway.

(e) Including the Jammu and Kashmir Railway (Native State section), except as regards items 1, 2, 3, 5, 6, 7, 8, 15, and 16.

(f) Including 13 miles of the East Indian Railway worked over by the North-Western (State) Railway.

(g) Including rent of leased lines (Rs. 14,331).

(h) Including the Hyderabad-Umarkot and Rajputana-Bhatinda Railways.

* The capital outlay here referred to is that shown in Chapter VI., Statement No. 16.

N.B.—For information given under progressive numbers 1 to 16, 18 to 25

No. 19.

GAUGE RAILWAYS during the Year ending the 31st December 1893.

THE STATE.		LINES WORKED BY GUARANTEED COMPANIES.			LINE OWNED BY NATIVE STATE AND WORKED BY COMPANY.	Total and Average of Principal Standard Gauge Lines.	HEADINGS.	Progressive No.
	XII. Eastern Bengal (State)	XVIII. Great Indian Peninsula. (k)	XIX. Bombay, Baroda, and Central India. (m)	XX. Madras.	XXVI. The Nizam's Guaranteed State. (p)			
							<i>Standard Gauge.</i>	
	248'75	1,286'77	460'90	839'22	(p) 441'81	9,654'57	Miles open on the 31st December 1893 - - -	1
	95'86	243'98	106'30	133'26	43'29	1,877'89	Total length of sidings - - -	2
	400'09	1,992'67	627'31	1,013'88	488'10	12,667'87	Total length of single track, including sidings -	3
	248'92	1,490'08	460'90	839'22	433'25	9,872'61	Mean mileage worked during the year - - -	4
	5,93,85,754	27,72,93,860	9,70,66,207	12,03,89,499	5,13,81,997	1,68,34,03,638	Capital outlay on open line to the 31st December 1893, including steamboat service and suspense.	5
	5,55,75,224	27,22,76,352	9,46,52,623	11,74,85,966	5,03,64,158	1,63,85,56,911	Capital outlay on open line to the 31st December 1893, exclusive of steamboat service and suspense.	6
	2,23,418	2,12,141	(m) 2,05,365	1,39,994	1,13,226	1,68,001	Average cost per mile of railway (a) - - -	7
	1,38,907	1,36,990	(m) 1,50,887	1,15,878	1,03,184	1,28,181	Average cost per mile of single track, including sidings (a)	8
	24,05,548	92,35,037	40,55,714	39,84,581	10,08,982	5,50,74,259	Coaching earnings - - -	9
	42,03,750	2,92,03,680	98,91,624	63,03,468	19,29,927	11,49,83,519	Goods earnings - - -	10
	70,69,485	3,88,13,741	1,50,96,045	1,05,05,036	80,61,805	17,37,96,299	Gross earnings - - -	11
	529	501	630	241	136	338	Gross earnings per mean mile worked per week, excluding steamboat earnings.	12
	30,92,012	(k) 2,07,94,447	55,18,002	50,83,294	(g) 16,35,154	7,92,71,110	Working expenses - - -	13
	43'74	53'57	36'55	48'39	53'08	45'61	Working expenses per cent. of gross earnings -	14
	39,77,473	1,80,19,234	95,78,043	54,21,742	14,36,451	9,45,25,189	Net earnings - - -	15
	6'70	6'50	9'87	4'50	3'57	5'62	Net earnings per cent. on capital outlay - - -	16
	—	6'43	9'99	4'49	2'72	—	Net earnings per cent. on paid up capital - - -	17
	880,101	3,719,854	1,251,636	1,282,000	271,957	16,966,035	Passenger train-miles - - -	18
	741,845	6,174,704	1,177,899	1,361,096	406,413	24,381,663	Goods train-miles - - -	19
	1,621,946	9,894,358	2,429,535	2,643,096	678,370	41,347,738	Total train-miles - - -	20
	2'73	2'48	3'96	3'11	3'71	3'25	Coaching earnings per passenger train-mile - - -	21
	5'67	4'73	8'40	4'63	4'75	4'72	Goods earnings per goods train-mile - - -	22
	4'36	3'92	6'21	3'97	4'51	4'20	Gross earnings per train-mile - - -	23
	1'91	2'10	2'27	1'92	2'40	1'92	Working expenses per train-mile - - -	24
	2'45	1'82	3'94	2'05	2'14	2'28	Net earnings per train-mile - - -	25
	(i) 0'67	1'36	(n) 0'56	0'60	0'74	—	Cost of train staff per train-mile - - -	26
	170'69	149'20	255'43	289'84	279'23	213'03	Average number of passengers in a passenger train -	27
	23'67	41'34	21'67	37'81	46'90	43'69	Average distance travelled by a passenger - - -	28
	115'07	113'69	209'96	108'69	125'06	141'77	Average number of tons in a goods train - - -	29
	69'58	246'94	167'76	127'62	100'73	167'12	Average distance over which a ton of goods was hauled.	30
	13'01	12'00	11'12	10'61	10'30	—	Average number of vehicles (excluding brake-vans)— In each passenger train - - -	31
	32'70	25'00	41'25	24'74	33'08	—	In each goods train - - -	32
	10'30	9'00	9'26	6'80	6'83	—	Passenger carriages } In each mixed train - - -	33
	5'40	5'00	16'41	14'93	8'72	—	Goods vehicles	
	150,231,114	554,985,658	319,707,432	371,570,545	75,939,038	3,614,361,777	Number of passengers carried one mile - - -	34
	85,363,949	701,401,662	247,312,566	147,804,852	50,825,613	3,456,501,821	Number of tons of goods carried one mile - - -	35
	1'19	1'70	0'98	0'86	1'10	—	Average cost of hauling for one mile— One passenger unit - - -	36
	3'50	3'90	2'73	4'02	3'54	—	One ton of goods - - -	37
	2'73	2'70	2'61	1'79	2'29	—	Average sum received for carrying for one mile— One passenger unit - - -	38
	9'47	7'99	7'68	8'19	7'29	—	One ton of goods - - -	39

(z) Including the Bengal Central Railway.

(j) Including the Wardha Coal, Dhond-Manmád, Khámgaon, and Amráoti Railways, except as regards items 1, 2, 3, 5, 6, 7, 8, 15, 16, and 17.

(k) Including rent of leased lines (Rs. 5,17,76), but excluding charges incurred direct by the State.

(l) Including the Pátri Branch.

(m) Including the State outlay on the Pátri Branch (Rs. 8,08,405). Excluding this outlay, the cost per mile is Rs. 2,03,611, and per mile of single track, including sidings, Rs. 1,49,598.

(n) Including the Godhra-Rutlam and Gaekwar's Petlád Railways.

(o) Including the Bezvada Extension and the Bezvada-Godávari section of the East Coast (State) Railway, except as regards items 15, 16, and 17.

(p) Of this length, 3'10 miles are worked over twice by every train.

(q) Including rent of leased line (Rs. 1,40,220.)

and 34 and 35, see also Statements Nos. 25, 16, 26, 27, 29, 30, 39, and 28.

STATEMENT

GENERAL RESULTS of the WORKING of the PRINCIPAL STANDARD and METRE GAUGE

Pro- gressive No.	HEADINGS.	STATE LINES WORKED BY COMPANIES.			
		XXXIII. Bengal and North-Western— Tirhoot Section. Company's Sec- tion.	XXXV. Rajputana- Malwa.	XXXVII. Southern Mahratta. (c)	XL. South Indian. (e)
	<i>Metre Gauge.</i>				
1	Miles open on the 31st December 1893 - - Miles	756'30	1,674'02	1,554'87	1,049'31
2	Total length of sidings - - - - "	95'75	(b) 255'12	149'62	119'96
3	Total length of single track, including sidings - - "	852'05	1,930'28	1,704'49	1,169'27
4	Mean mileage worked during the year - - - "	756'30	1,674'02	1,512'29	1,049'31
*5	Capital outlay on open line to the 31st December 1893, including steamboat service and suspense. Rs.	5,32,63,913	13,09,15,579	12,08,83,425	7,68,99,598
*6	Capital outlay on open line to the 31st December 1893, exclusive of steamboat service and suspense. "	5,04,60,205	12,65,57,851	11,85,84,972	7,35,94,776
7	Average cost per mile of railway (a) - - - "	66,720	75,601	76,287	70,138
8	Average cost per mile of single track, including sidings - - "	59,222	65,565	69,572	62,941
9	Coaching earnings - - - - - "	20,83,487	66,35,963	31,33,087	41,63,708
10	Goods earnings - - - - - "	25,86,872	1,55,92,268	45,78,731	37,76,548
11	Gross earnings - - - - - "	52,95,375	2,22,70,685	78,20,038	81,10,429
12	Gross earnings per mean mile worked per week, excluding steamboat earnings. "	123	259	99	149
13	Working expenses - - - - - "	22,87,448	92,81,585	46,66,658	49,56,950
14	Working expenses per cent. of gross earnings - - - "	43'20	41'12	59'68	61'12
15	Net earnings - - - - - Rs.	30,07,927	1,32,89,100	31,53,380	31,53,479
16	Net earnings per cent. on capital outlay - - - - "	5'65	10'15	2'62	4'10
17	Net earnings per cent. on paid-up capital - - - - "	—	—	(e) 2'60	—
18	Passenger train-miles - - - - - Miles	718,367	2,135,274	1,129,333	1,422,537
19	Goods train-miles - - - - - "	913,102	4,430,623	1,898,891	1,777,489
20	Total train-miles - - - - - "	1,631,469	6,565,897	3,028,224	3,199,976
21	Coaching earnings per passenger train-mile - - - Rs.	2'90	3'11	2'77	2'93
22	Goods earnings per goods train-mile - - - - - "	2'83	3'52	2'41	2'12
23	Gross earnings per train-mile - - - - - "	3'24	3'44	2'58	2'53
24	Working expenses per train-mile - - - - - "	1'40	1'41	1'54	1'55
25	Net earnings per train-mile - - - - - "	1'84	2'03	1'04	0'98
26	Cost of train staff per train-mile - - - - - Annas	0'57	(c) 0'55	0'47	0'32
27	Average number of passengers in a passenger train - No.	247'66	255'47	212'95	257'24
28	Average distance travelled by a passenger - - - Miles	35'07	54'17	41'21	34'08
29	Average number of tons in a goods train - - - Tons	96'80	100'50	60'31	53'15
30	Average distance over which a ton of goods was hauled Miles	127'40	242'65	125'90	63'29
31	Average number of vehicles (excluding brake-vans): In each passenger train - - - - - No.	16'00	13'13	8'36	17'53
32	In each goods train - - - - - "	32'00	24'05	22'79	15'63
33	In each mixed train { Passenger carriages - - - - - "	12'00	12'22	7'09	11'25
	{ Goods vehicles - - - - - "	11'00	9'45	11'83	11'08
34	Number of passengers carried one mile - - - Unit-miles	177,907,946	545,499,238	240,462,441	365,981,077
35	Number of tons of goods carried one mile - - - Ton-miles	88,388,326	445,290,285	114,524,256	94,477,653
36	Average cost of hauling for one mile: One passenger unit - - - - - Pies	0'78	0'65	1'18	0'98
37	One ton of goods - - - - - "	2'48	2'96	5'04	5'52
38	Average sum received for carrying for one mile: One passenger unit - - - - - Pies	2'10	2'11	2'27	2'07
39	One ton of goods - - - - - "	5'62	6'72	7'67	7'87

(a) Excluding steamer service and suspense.

(b) Including 3'07 miles of main line laid on the standard gauge.

(c) Including the Palanpur-Deesa and the Gaekwar's Mchána Railways.

(d) Including the Guntakal-Mysore Frontier, the Southern Mahratta (Mysore section) the Kolhápúr, the Yesvantpur-Mysore Frontier, and Mysore-Nanjangud Railways.

(e) Including only the Southern Mahratta Railway (Mysore section.)

(f) Including the Pondicherry Railway.

* The capital outlay here referred to is that shown in Chapter VI., Statement No. 16.

N.B.—For information given under progressive numbers 1 to 16, 18 to 25,

No. 19—concluded.

RAILWAYS during the Year ending the 31st December 1893—concluded.

STATE LINES WORKED BY THE STATE.			LINES OWNED AND WORKED BY NATIVE STATES.				Total and Average of Principal Metre Gauge Lines.	Pro- gressive No.
XLIII.—EASTERN BENGAL (STATE)		XLIV. Burma (State).	LV.—JODHPUR-BIKANER.		LVI. Bhāvnagar- Gondal- Junāgarh- Porbandar.			
Northern and Behar Sections, including the Kamia-Dharila (2' 8" Gauge) Branch.	Dacca Section.		Jodhpore Section.	Bikaner Section.				
478'04	85'92	729'89	320'50	43'50	(h) 333'65	7,026'00	1	
77'85	13'63	108'69	9'00	1'00	41'45	872'07	2	
555'89	99'55	847'58	329'50	44'50	375'10	7,908'21	3	
444'62	85'92	725'33	306'30	43'50	333'55	6,931'14	4	
3,95,58,965	67,02,995	6,32,00,054	64,74,611	9,65,771	1,72,28,860	51,55,93,759	5	
13,86,23,524	66,99,873	6,14,45,754	64,24,467	9,65,771	1,68,84,909	50,02,42,102	6	
80,796	77,978	84,185	20,045	22,202	(i) 51,299	71,199	7	
69,481	67,302	72,496	19,498	21,703	(j) 46,000	63,256	8	
15,73,136	3,06,526	37,31,619	3,85,496	31,366	10,18,599	2,30,62,977	9	
25,70,474	1,11,147	28,35,103	4,25,939	27,566	9,57,818	3,34,60,466	10	
45,53,672	4,27,990	67,22,507	8,31,765	66,725	20,29,929	5,84,29,115	11	
182	96	178	52	30	117	160	12	
20,56,885	2,67,112	44,80,015	3,97,870	40,990	11,41,221	2,95,76,734	13	
45'17	62'41	66'64	47'83	61'43	56'22	50'62	14	
24,96,787	1,60,878	22,42,492	4,38,895	25,785	8,88,708	2,88,52,381	15	
6'31	2'40	3'55	6'70	2'66	5'16	5'60	16	
—	—	—	—	—	—	—	17	
546,049	87,431	925,881	139,614	20,032	289,926	7,414,444	18	
758,134	89,239	1,013,862	148,663	12,114	283,967	11,826,024	19	
1,304,183	176,670	1,839,743	288,277	32,146	578,833	18,740,468	20	
2'88	3'51	4'03	2'76	1'57	3'51	3'11	21	
3'39	1'25	2'79	2'87	2'28	3'37	2'95	22	
3'49	2'42	3'46	2'88	2'07	3'54	3'12	23	
1'58	1'51	2'30	1'37	1'27	1'99	1'58	24	
1'91	0'91	1'16	1'51	0'80	1'55	1'54	25	
0'55	0'55	0'83	0'19	0'17	0'34	—	26	
180'31	239'14	236'29	228'13	128'23	222'42	233'30	27	
40'29	22'24	33'11	55'05	39'14	40'50	40'21	28	
68'13	25'24	73'73	56'16	33'99	58'31	79'17	29	
98'05	48'34	89'14	79'26	39'18	71'95	133'81	30	
14'85	11'06	12'25	} (g)	(g)	9'93	—	31	
33'43	25'30	29'09			27'82	—	32	
9'46	13'16	13'17	9'82	7'63	14'46	} —	33	
12'48	5'33	13'51	11'91	7'45	6'72			
98,459,311	20,908,544	218,774,518	31,850,316	2,568,759	64,486,239	1,766,878,389	34	
51,654,683	2,252,665	74,748,193	8,349,181	411,720	16,558,564	896,655,526	35	
1'01	1'01	1'53	(g)	(g)	1'44	—	36	
4'64	4'64	6'51	(g)	(g)	6'85	—	37	
2'71	2'61	3'12	2'08	2'06	2'85	—	38	
9'55	9'47	7'28	9'79	12'85	11'11	—	39	

(g) Information not furnished.

(h) Including 4'50 miles of State mileage in dock estates and quarry lines constructed, and maintained by the States themselves.

(i) Calculated on 329'15 miles.

(j) Calculated on 387'06 miles.

and 34 and 35, see also Statements Nos. 25, 16, 26, 27, 29 30 39 and 28.

STATEMENT No. 20.

GUARANTEED INTEREST.—INDIAN RAILWAYS.

Total Amount advanced on account of GUARANTEED INTEREST to 31st December 1893, the net REVENUE these Railways to 30th June 1893 appropriated towards the repayment of that amount and the balance.

Serial Number.	Railway Company.	Interest advanced to the 31st December 1892.	Interest advanced during 1893.				Total. (b)	Aggregate of net revenue balance for the several half years to the 30th June 1893.	Net amount advanced.
			England.	India.	Interest charged on overdrawn Capital. (a)	Total.			
XVIII.	Great Indian Peninsula - -	£ 33,331,514	£ 1,200,008	£ 1,913	£ —	£ 1,201,921	£ 34,533,436	£ 31,207,657	£ 3,325,779
XIX.	Bombay, Baroda, and Central India	11,586,279	417,514	252	139	417,905	12,004,184	10,307,477	1,696,707
XX.	Madras - - - -	15,745,870	533,737	—	—	533,737	16,279,407	8,116,878	8,162,529
	Total - - - -	60,663,463	2,151,259	2,165	139	2,153,583	62,817,027	49,632,012	13,185,015

(a) Interest on overdrawn capital is, for the year 1893, being charged in that year by transfer entry.

(b) Represents interest due up to the 30th June 1893 only, the interest for the half-year ended the 31st December 1893 not being paid until the succeeding half-year.

NOTE.—Rupees converted into sterling at the contract rate of exchange.

STATEMENT No. 21.

AMOUNT OF TOTAL SURPLUS PROFITS ON GUARANTEED RAILWAYS as calculated under the Contracts for distribution between Government and Railway Companies to the 31st December 1893 inclusive.

Half-year ending.	XVIII. Great Indian Peninsula Railway.	XIX. Bombay, Baroda, and Central India Railway.	XX. Madras.	Total.
	Rs.	Rs.	Rs.	Rs.
To end of 1880 - - -	1,47,80,444	4,02,862	—	151,83,306
June 1881 - - -	36,90,753	17,28,545	—	54,19,298
December 1881 - - -	13,614	—	—	13,614
June 1882 - - -	64,37,716	16,12,691	—	80,50,407
December 1882 - - -	—	—	—	—
June 1883 - - -	66,52,396	22,03,353	—	88,55,749
December 1883 - - -	—	86,214	—	86,214
June 1884 - - -	49,51,342	27,05,193	—	76,56,535
December 1884 - - -	—	—	—	—
June 1885 - - -	54,04,778	22,46,727	—	76,51,505
December 1885 - - -	—	6,66,993	—	6,66,993
June 1886 - - -	66,37,691	27,31,549	—	93,69,240
December 1886 - - -	13,71,491	6,04,036	—	20,35,527
June 1887 - - -	82,13,411	25,76,695	—	1,07,90,106
December 1887 - - -	—	6,644	—	6,644
June 1888 - - -	79,11,414	22,65,611	—	1,01,77,025
December 1888 - - -	7,78,571	2,64,174	—	10,42,745
June 1889 - - -	53,73,655	26,37,284	—	80,10,939
December 1889 - - -	—	3,35,498	—	3,35,498
June 1890 - - -	62,09,943	26,12,555	—	88,22,498
December 1890 - - -	—	2,31,686	—	2,31,686
June 1891 - - -	1,03,78,016	31,79,971	—	1,35,57,987
December 1891 - - -	—	4,32,725	—	4,32,725
June 1892 - - -	76,27,013	32,98,109	—	1,09,25,122
December 1892 - - -	—	2,75,400	—	2,75,400
June 1893 - - -	58,62,262	39,97,617	—	98,59,879
December 1893 - - -	—	10,21,458	—	10,21,458
Total - - -	10,22,94,510	3,81,83,590	—	14,04,78,100
Add—Guaranteed lines subsequently purchased by Government—				
East Indian Railway - -	—	—	—	6,38,77,385
Eastern Bengal Railway - -	—	—	—	93,09,567
Sind, Punjab, and Delhi Railway - -	—	—	—	2,96,825
South Indian - - -	—	—	—	2,92,112
Total - - -	10,22,94,510	3,81,83,590	—	21,42,53,989

STATEMENT No. 22.

GUARANTEED RAILWAYS.

NOTE.—Rupees converted into sterling at the contract rates of exchange.

Year.	Capital expended to the 31st March.	Net Revenue for the Year ended the 31st December.	Guaranteed Interest for the Year ended the 31st December.	Interest in excess of Revenue.	Revenue in excess of Interest.
	£	£	£	£	£
1870	83,910,587	2,846,600	4,344,113	1,497,513	—
1871	87,686,857	2,686,260	4,544,764	1,858,504	—
1872	90,183,585	2,869,223	4,603,853	1,734,630	—
1873	90,660,830	3,185,069	4,613,573	1,428,504	—
1874	91,353,883	3,956,071	4,651,088	695,017	—
1875	92,441,794	3,576,514	4,641,979	1,065,465	—
1876	93,392,600	4,442,430	4,658,947	216,517	—
1877	94,108,059	6,117,226	4,662,635	—	1,454,591
1878	95,430,863	5,002,028	4,708,134	—	293,894
1879	96,444,666	5,062,188	4,748,233	—	313,955
1880*	65,907,288	2,662,213	3,263,179	600,966	—
1881	66,349,320	3,110,824	3,272,651	161,827	—
1882	67,021,755	3,319,439	3,279,407	—	40,032
1883	67,431,448	3,542,973	3,289,439	—	253,534
1884	68,769,369	3,207,313	3,243,015	35,702	—
1885†	66,558,570	3,505,142	3,191,169	—	313,973
1886‡	56,814,758	3,378,242	2,702,701	—	675,541
1887	57,046,325	3,326,485	2,725,445	—	631,040
1888	57,694,898	3,433,689	2,688,848	—	744,841
1889§	49,045,463	2,853,584	2,345,383	—	508,901
1890	49,385,293	3,107,217	2,361,094	—	743,123
1891	45,091,263	3,266,586	2,151,338	—	1,115,248
1892	45,137,155	3,012,611	2,148,725	—	863,886
1893	45,207,409	3,046,225	2,157,007	—	889,218

* East Indian Railway excluded from this and subsequent years.

† Eastern Bengal Railway ditto ditto.

‡ Sind, Punjab, and Delhi Railway ditto ditto.

§ Oudh and Rohilkhand Railway ditto ditto.

|| South Indian Railway ditto ditto.

STATEMENT No. 23.

RESULT of WORKING the GUARANTEED RAILWAYS and LINES LEASED to or PURCHASED from GUARANTEED COMPANIES and worked by those Companies for the Year ended 31st December 1893.

Serial Number.	Railway.	Capital Cost.	Capital cost in Rupees; Sterling Cost being Converted at the average rate of the Secretary of State's Remittances during the Year 1893.	(f.) Net Revenue.	Amount chargeable against Net Revenue under Contract on Account of Interest.	Amount of Interest Converted at Average Rate of Exchange plus Interest in India.	Contribution to Provident Fund.
1.	2.	3.	4.	5.	6.	7.	8.
	STATE LINES WORKED BY GUARANTEED COMPANIES.	£	Rs.	Rs.	Rs.	Rs.	Rs.
I.	East Indian - -	{ 37,200,000 Rs. 3,48,96,213 Rs.	62,67,97,045	3,64,58,882	(b) 2,75,73,671	(b) 2,88,88,586	3,64,589
XXXV.	Rajputana-Malwa - -	14,30,06,325 £	—	1,33,22,568	67,59,610	55,42,279	—
XL.	South Indian - -	{ 5,692,557 Rs. 2,61,95,707 £	11,67,71,761	31,68,989	24,11,408	41,93,954	7,936
	GUARANTEED RAILWAYS.	Rs.					
XVII.	Great Indian Peninsula -	27,72,93,860	—	1,81,35,016	1,31,53,246	1,91,65,618	1,24,604
XIX.	Bombay, Baroda, and Central India.	9,62,57,802	—	96,74,792	45,58,969	66,44,226	96,748
XX.	Madras - - -	12,03,89,499	—	54,21,742	58,18,768	84,82,732	—

(b) Includes 65,500 for redemption of capital.

(f) The difference between the figures entered in this column and those given in Chapters VII. and VIII., Statements Nos. 17, 19, and 29, are due partly to the exclusion, in some cases, of contributions to provident funds shown in column 8, and partly to adjustments on account of out-standings recovered during the year.

STATEMENT No. 23—concluded.

Serial Number.	Railway.	Surplus for Division.	Company's Share of Profits for the Year.	(a) Dividend earned by Company, including Guaranteed Interest.	Total actual Charges to Government for Interest, Surplus Profits, &c.	Net result to Government.	Percentage of 5 minus 8 (less any loss to Govern- ment on 4)*.
						Amount.	
		9.	10.	11.	12.	12.	14.
	STATE LINES WORKED BY GUARANTEED COMPANIES.	Rs.	Rs.	£ s. d.	Rs.	Rs.	
I.	East Indian - - -	85,20,622	(e) (g) 16,90,816	5 12 1	(b) 3,09,94,905	54,63,977	5.76
XXXV.	Rajputana-Malwa - -	65,62,958	(e) 12,77,884	(c) (d)	68,54,872	64,67,696	9.31
XL.	South Indian - - -	7,44,645	62,485	3 17 3	42,64,015	-11,00,026	1.76
	GUARANTEED RAILWAYS.						
XVII.	Great Indian Peninsula -	{ 58,62,262 - 10,05,096 }	29,31,131	5 16 7	2,23,86,168	-42,51,152	4.96
XIX.	Bombay, Baroda, and Cen- tral India.	50,19,075	25,09,537	7 17 5	93,06,712	3,68,080	9.95
XX.	Madras - - - -	- 3,97,026	—	4 15 0	85,90,222	-31,68,480	1.87

(a) This column shows approximately the dividends earned by the companies and not those actually distributed.

(b) Includes £25,500 for redemption of capital.

(c) The profits were paid over to the Bombay, Baroda, and Central India Railway Company, and were distributed among the shareholders of that company, and are included in the dividend quoted against the Bombay, Baroda, and Central India Railway.

(d) Average.

(e) Less Indian Income-tax.

(g) Includes Rs. 37,605, surplus profits earned by the company for working the Tarkessar Railway.

* In the cases where blanks occur in column (4) the percentages have been calculated on the capital cost given in column (3).

CHAPTER VIII.

DETAILS OF REVENUE EARNINGS AND EXPENDITURE.

Public Traffic.—The summary of principal commodities in Statement No. 24 on page 125 shows that the earnings from public traffic, tabulated under 32 heads, amounted in 1893 on the standard and metre gauge railways to Rs. 14,20,10,556. This, however, includes a sum of Rs. 1,09,99,594 on account of coal and railway plant and rolling stock carried chiefly for foreign railways, which would for the most part contribute nothing to the profits if the lines were worked as one system. Excluding the above items, the balance (Rs. 13,10,10,962), it will be noticed, is mainly accounted for under six heads of country produce, viz., cotton (raw), grains, jute, oil-seeds, salt, and sugar, the earnings from which amounted to Rs. 8,13,07,160, or about 62 per cent. of the whole, leaving Rs. 4,97,03,802 as the earnings under the remaining 24 heads.

2. *Grain and Seeds Traffic.*—In the grain and seeds traffic, which forms the most important item of freight on Indian railways, there was an increase, compared with the preceding year, of 530,141 tons, or 7·61 per cent., the actual figures being:—

1892 -	-	-	-	-	-	Tons.	6,965,328*
1893 -	-	-	-	-	-	-	7,495,469

3. *Wheat Traffic.*—In wheat alone the total traffic over the entire system of standard and metre gauge railways was as follows:—

	Tons.	Earnings.
		Rs.
1892 -	-	1,186,374
1893 -	-	1,60,74,947
		987,791
		1,19,72,296

The quantities of wheat carried by the important exporting railways during the past seven years was as follows:—

Railways.	1887.	1888.	1889.	1890.	1891.	1892.	1886.
	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.
Great Indian Peninsula Railway -	485,175	523,082	272,594	313,459	544,877	388,180	319,472
Bombay, Baroda, and Central India Railway	42,572	92,997	83,264	40,678	215,323	140,659	49,669
East Indian Railway -	305,967	260,550	177,511	139,145	405,193	357,026	166,007
North-Western (State) Railway -	130,714	298,602	422,870	438,507	716,152	344,958	385,531
Total† -	964,428	1,175,231	956,239	931,789	1,881,545	1,230,823	920,679

The exports of wheat from the three chief ports during the same period are given in the following table, which also shows the percentage of exports on the estimated out-turn of wheat in the financial year ending on the 31st March of the calendar year for which the export figures are given:—

Ports.	1887.	1888.	1889.	1890.	1891.	1892.	1893.
	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.
Bombay -	468,861	489,823	310,365	291,821	661,186	483,075	256,324
Calcutta -	231,715	149,446	78,900	67,223	220,207	180,151	54,349
Kurrachee -	35,621	153,479	348,727	332,508	524,809	263,376	263,923
Total -	736,197	792,748	738,192	681,552	1,406,202	926,602	574,596
	1886-87.	1887-88.	1888-89.	1889-90.	1890-91.	1891-92.	1892-93.
Estimated out-turn of wheat in India during each previous financial year in tons -	6,417,078	7,014,896	6,357,074	6,123,000	6,876,000	*5,535,000	7,149,000
Percentage of exports on out-turn -	11·47	11·30	11·61	11·13	20·45	16·74	8·04

* Revised figures.

† In these figures through bookings are credited both to home and foreign lines, and the totals will in some cases therefore be greater than those shown for the traffic carried over the entire system of railways.

The large decrease in 1893 as compared with the two previous years is due to a heavy falling off in the demand for export. It must, however, be borne in mind that the figures for the out-turn are only estimates, which are liable to considerable deviation from actuals.

4. *Principal Features of Working.*—The following paragraphs show the principal features in the working of the standard and metre gauge railways during 1893 as compared with the previous year. Statements giving detailed statistics for these railways will be found on pages 126 to 149.

EAST INDIAN RAILWAY SYSTEM (STANDARD GAUGE).

5. In the tables in this report the results of working the East Indian Railway proper and the branch lines worked by the undertaking, viz., the Delhi-Umballa-Kalka and the Tarkessur Railways, are shown separately.

The mean mileage worked, including branch lines and lines worked over, was 1,818·60 miles against 1,811·32 miles in the previous year; the increase was principally due to the fact that the Nalhāti and Patna-Gya (until recently State railways) were worked as part of the undertaking during a portion only of the previous year.

The gross earnings of the system increased from Rs. 5,05,17,043 to Rs. 5,12,77,086, or by Rs. 7,60,043, and the working expenses* by Rs. 6,80,740, so that the net earnings stood at Rs. 3,69,05,542† against Rs. 3,57,77,112 in the previous year.

The number of passengers carried were more by 751,584, and the earnings by Rs. 10,96,531, of which Rs. 9,07,597 were derived from third-class passengers. The increase in the third-class passenger traffic is ascribed partly to normal growth and partly to a large number of pilgrims having travelled in connection with a fair of special sanctity among the Hindus at Pooree. There was also an improvement in the intermediate class traffic chiefly in return journey passengers holding tickets issued at $1\frac{1}{3}$ fares.

The tonnage of goods carried and the earnings therefrom amounted to 5,405,242 tons and Rs. 3,29,70,438 respectively against 5,228,260 tons and Rs. 3,32,71,350 in the previous year. The falling off in earnings is principally accounted for by a decrease of 191,019 tons and Rs. 12,23,410 in the wheat traffic due to a collapse in the export trade. The earnings from coal carried for the public and foreign railways were Rs. 3,19,684 more, and there were also satisfactory increases in grains other than wheat and pulses, oil-seeds, and metals.

The increase in the working expenses was principally due to the expenditure on maintenance of way, works, and stations having been more by Rs. 5,18,006.

During the year the mail trains were fitted with the vacuum-brake and lighted with Pintsch's gas.

BENGAL-NÁGPUR RAILWAY (STANDARD GAUGE).

6. The mean mileage worked during the year was 859·76 miles against 831·58 miles worked in the previous year, the increase being due to the Jharsuguda-Sambalpur branch, $30\frac{1}{4}$ miles in length, having been opened for goods traffic on the 1st February and for passenger traffic on 10th March 1893.

The gross earnings increased from Rs. 60,83,561 to Rs. 64,17,751, or by Rs. 3,34,190; and as the working expenses were more by Rs. 80,135 only, the net earnings showed an improvement of Rs. 2,54,055.

The traffic in passengers showed an improvement of 237,282 in the number carried and of Rs. 1,75,919 in earnings. The bulk of the increase was derived from third-class passengers, and is explained to be due to a larger number of pilgrims having travelled in connection with the Makur Sankrant bathing festival and local fairs in the Chhattisgarh division, and to the exodus of labourers from the Manbhoom district and the eastern portion of the line to Assam and the Assam-Bengal Railway. The improvement is also explained to be due to the fact that Mahomedan pilgrims to Mecca availed themselves of the Bengal-Nágpur railway route for the first time.

The tonnage of goods carried rose from 1,207,671 tons to 1,242,641 tons, and the earnings from Rs. 45,61,506 to Rs. 46,08,305.

* Including contributions to the Provident Fund.

† This if after crediting working expenses with Rs. 10,49,128, added to the net revenue account by a write-back to capital for Denham-Olpherts' sleepers put into the line between January 1880 and December 1892.

The principal fluctuations under "General merchandise" were increases of 34,687 tons and Rs. 2,78,668 in the traffic in oil-seeds and 7,205 tons and Rs. 67,977 in dyes and tans, and decreases of 41,367 tons and Rs. 1,60,298 in grain and pulse, and 1,291 tons and Rs. 65,357 in spices. The improvement in the traffic in oilseeds is stated to be consequent on good crops of linseed in the Chhattisgarh district, and that in dyes and tans to an increased export of myrabolams from the Katni branch and the Chhattisgarh district. The falling off in the traffic in grain and pulse is ascribed to the failure of the wheat crop and to a decrease in the demand for rice, while that in spices is chiefly accounted for by the heavy crops of chillies in the districts served by the railway.

There was an increase of 112,347 tons and Rs. 83,439 in the traffic in coal carried for the public and foreign railways, principally due to heavy despatches from the Sanctoria coalfields to the Kidderpore Docks for shipment.

The principal fluctuations in the working expenses were increases of Rs. 83,619 and Rs. 50,929 under "Maintenance of way, works, and stations" and "Carriage and waggon expenses," and a decrease of Rs. 73,608 under "Locomotive expenses."

The increase under the first head is explained to be due to the increased expenditure on ballast, sleepers, and staff quarters, and that under "Carriage and waggon expenses" to the abnormal expenditure on renewal of bearing-springs and axle-boxes. The decrease under "Locomotive expenses" is chiefly accounted for by a decrease in the cost of coal.

INDIAN MIDLAND RAILWAY SYSTEM (STANDARD GAUGE).

7. The gross earnings of the Indian Midland Railway, including the Bhopal-Itársi Railway, during the year 1893, amounted to Rs. 50,52,450, against Rs. 50,78,521 in the previous year, and the working expenses to Rs. 31,69,078 against Rs. 31,29,981, resulting in a decrease of Rs. 65,168 in the net earnings.

The number of passengers carried increased from 1,729,937 to 1,762,625, and the earnings from Rs. 17,54,491 to Rs. 17,83,480. The earnings from other coaching traffic also showed an increase of Rs. 50,200. The improvement is believed to be due to the natural development of the traffic in the districts served by the railway.

The passenger traffic of 1893 was of an ordinary nature, whereas in 1892 there was a large special pilgrim traffic.

The tonnage of goods carried fell from 622,282 tons to 558,698 tons, and the earnings from Rs. 28,65,714 to Rs. 27,53,420.

Under "general merchandise" there were decreases of 43,190 tons and Rs. 2,90,284 and 6,168 tons and Rs. 1,06,493 in the traffic in grain and pulse and sugar respectively. The former is attributed to the stagnation in the export wheat trade, and the latter to the traffic of 1892 having been somewhat exceptional owing to short crops in other parts of the country. These decreases were, however, partially balanced by an increase of 21,427 tons and Rs. 1,78,626 in oilseeds, stated to be due to a more favourable market at Bombay, and to the development of traffic by the Indian Midland Railway route. The traffic in raw and manufactured cotton also showed increases of 4,844 tons and Rs. 49,192 and 1,878 tons and Rs. 44,868 respectively, explained to be due to a somewhat better crop and increased demand.

The increase in the working expenses is explained to be due principally to extraordinary renewals of permanent-way on the Bhopal-Itársi Railway, and on the Sindia section to the opening of additional stations and out-agencies, and to an exceptional payment of commission on renewal of debentures in England. There was a decrease of Rs. 90,192 under "Locomotive expenses," which is attributed to reductions in the price and cost of carriage of coal.

GODHRA-RUTLAM RAILWAY (STANDARD GAUGE).

8. The first section of this line from Godhra to Limkhérá, 25 miles in length, was opened for public traffic on the 16th January 1893.

The gross earnings from the date of opening to the 31st December 1893 amounted to Rs. 62,580, the working expenses to Rs. 26,040, and the net earnings to Rs. 36,540.

The line is worked by the Bombay, Baroda and Central India Railway Company.

NORTH-WESTERN (STATE) RAILWAY INCLUDING THE JAMMU AND KASHMIR RAILWAY,
NATIVE STATE SECTION (STANDARD GAUGE).

9. The mean mileage worked was 2,449·20 miles against 2,444·28 miles in the previous year, the increase being due to the Kundián-Mári section having been worked for a portion only of 1892.

The gross earnings increased from Rs. 2,64,35,665 to Rs. 2,92,68,732, or by Rs. 28,33,067, but as the working expenses were more by Rs. 25,15,618, the net earnings showed an improvement of Rs. 3,17,449 only.

The increase in the number of passengers carried and in the earnings therefrom amounted to 543,102 and Rs. 70,458 respectively.

The tonnage of goods carried rose from 3,472,872 tons to 4,921,940 tons, and the earnings from Rs. 1,64,44,903 to Rs. 1,91,19,245. The noticeable increases under "General merchandise" occurred chiefly under grains and oilseeds, the increases in the quantity carried and in the earnings being 124,144 tons and Rs. 7,24,102 and 126,383 tons and Rs. 16,85,864 respectively. The increase in grains was mainly due to better crops in the country, and that in oilseeds to a large export demand. There was also an increase of 11,550 tons and Rs. 3,63,672 in the traffic in raw cotton, almost wholly in the traffic to Kurrachee.

The principal increases in the working expenses were Rs. 15,67,742 under "Maintenance of way, works, and stations," Rs. 3,53,838 under "Locomotive expenses," and Rs. 4,83,017 under "Carriage and waggon expenses."

The increase under the first head was principally due to special renewals and to increased expenditure in connection with flood works and the strengthening of weak girder bridges. The expenses were further increased by charges for exchange compensation from the 1st March 1893.

The increase under "Locomotive expenses" was chiefly due to the train-mileage run having been more by 842,590 miles, and that in the "Carriage and waggon expenses" is for the most part accounted for by a larger number of vehicles having been renewed during the year.

Through Booking to and from Europe.—The following statement compares the North-Western (State) Railway earnings from passengers and parcels traffic in connection with the through booking arrangements to and from Europe during the years 1892 and 1893:—

	Previous Year.		1893.	
	No. or Weight.	Amount.	No. or Weight.	Amount.
FROM INDIA TO ENGLAND :		Rs.		Rs.
First-class passengers - - -	165	9,337	140	7,973
Second-class " - - -	32	923	25	663
Third-class " - - -	2	17	2	14
Luggage - - - - Tons	5·162	835	Tons 2·467	313
Parcels - - - - "	4·189	789	" 3·962	831
Total - - - -	—	11,901	—	9,794
FROM ENGLAND TO INDIA :		Rs.		Rs.
First-class passengers - - -	114	6,678	90	5,390
Second-class " - - -	13	368	20	670
Third-class " - - -	5	54	1	13
Luggage - - - - Tons	14·846	2,147	Tons 10·093	1,508
Parcels - - - - "	0·918	*195	" 0·608	134
Dogs - - - -	—	—	1	3
Total - - - -	—	9,442	—	7,718

* Excluding an adjustment of bookings of the previous year.

It will be noticed that there was a decrease in the passenger traffic chiefly owing to a falling off in the number of first-class passengers to England. The principal stations booking to England were Lahore, Ráwalpindi, Saháranpur, and Umballa, while the principal stations to which passengers were booked from England were Lahore and Ráwalpindi.

HYDERABAD-UMARKOT RAILWAY (STANDARD GAUGE).

10. The mean mileage worked during the year was 58·91 miles against 21·90 miles in 1892, the increase being due to the line having been worked throughout the year under review, as against a portion of the previous year.

The gross earnings amounted to Rs. 1,30,817 against Rs. 33,206 and the working expenses to Rs. 1,14,345 against Rs. 35,155, resulting in an increase of Rs. 18,421 in the net earnings.

The number of passengers carried amounted to 383,982 and the earnings therefrom to Rs. 68,322 against 91,200 and Rs. 18,098 in the previous year.

The tonnage of goods lifted increased from 8,684 tons to 33,287 tons and the earnings from Rs. 13,641 to Rs. 57,875.

The line is worked by the North-Western (State) Railway at 45 per cent. on the gross receipts plus actual maintenance charges.

ODDH AND ROHILKHAND (STATE) RAILWAY (STANDARD GAUGE).

11. There was an increase of 9·98 miles in the mean mileage worked during 1893 due to the opening of the Lucknow-Rae Bareli section, 48½ miles, in October 1893.

The gross earnings increased from Rs. 85,42,836 to Rs. 87,15,927, or by Rs. 1,73,090; but as the working expenses were more by Rs. 1,72,367, the net earnings stood at Rs. 50,17,053 against Rs. 50,16,329 in the previous year.

The gross earnings and net earnings for the year are the largest on record.

The increase in the number of passengers carried and in the earnings therefrom amounted to 318,364 and Rs. 1,53,957 respectively, and is ascribed to an abnormal attendance at the Kartaki and Amawas fairs, to the increase in the mean mileage worked, and to a general development of the passenger traffic.

The tonnage of goods carried rose from 1,228,088 tons to 1,406,464 tons, and the earnings from Rs. 44,12,793 to Rs. 44,53,396. The large increase in the tonnage, accompanied by a comparatively small increase in the earnings, was due to the carriage at low rates of large consignments of construction material for the Bareilly-Rámpur-Moradabad and Lucknow-Rae Bareli sections.

The tonnage of "General merchandise" fell off by 59,804 tons and the earnings by Rs. 2,97,094. The noticeable decreases were in the traffic in grain and pulse and sugar. In the former there was a diminution in tonnage of 38,644 tons and in earnings of Rs. 2,15,001, which is for the most part ascribed to a very large falling off in the export of wheat to Europe. The decrease in the sugar traffic amounted to 41,267 tons and Rs. 1,14,986, and is explained to be entirely due to an unfavourable sugar-cane crop.

There was an increase of Rs. 63,169 in the expenditure under "Maintenance of way, works, and stations," which is accounted for by the increased cost of rail renewals.

The locomotive and traffic expenses were more by Rs. 50,369 and Rs. 44,440 respectively, due chiefly to the train-mileage run having been more by 191,605 miles and to the opening of the Lucknow-Rae-Bareli section.

There was also an increase of Rs. 35,045 under "Carriage and waggon expenses" incurred principally on repairs and renewals to the coaching and goods stock taken over from the late Oudh and Rohilkhand Railway Company.

EASTERN BENGAL (STATE) RAILWAY (STANDARD, METRE, AND SPECIAL GAUGES).

12. In the tables in this report the results of working the following sections of the Eastern Bengal (State) Railway system are shown separately :—

Standard gauge section.

Northern and Behar (metre gauge) sections, including the Kaunia-Dharlla (2' 6" gauge) branch.

Dacca (metre gauge) section.

The gross earnings of the system increased from Rs. 1,15,56,446 to Rs. 1,20,51,147, or by Rs. 4,94,701; and as the working expenses were more by Rs. 93,290 only, the net earnings showed an improvement of Rs. 4,01,411.

The increase in the number of passengers carried and in the earnings therefrom amounted to 2,98,124 and Rs. 2,47,336 respectively. The improvement is ascribed to the Dole Jatra and Darwani melas, to the Baruni bathing festival, and to a general development of the passenger traffic.

The tonnage of goods carried rose from 1,258,264 tons to 1,797,121 tons, and the earnings from Rs. 65,89,652 to Rs. 68,90,371.

The noticeable increases under "General merchandise" occurred in the traffic in grain and pulse, jute, oils, oil-seed, spices, and tea.

The increases in the quantity carried and in the earnings from grain and pulse were 33,560 tons and Rs. 1,20,748. This was due to large consignments from Calcutta and from the East Indian Railway *viâ* Naihati to the Eastern districts, where the crops had been spoiled by floods. The jute traffic showed an increase of 4,856 tons and Rs. 65,680, owing to a good crop and larger despatches from Kooshtea, Goalundo, Náráyanganj, Serajganj, and stations on the northern sections.

There was also a marked improvement in the traffic in oils and oil-seeds. The increases were 41,530 tons and Rs. 53,422, and 12,811 tons and Rs. 35,209 respectively. The former was partly due to the prohibition of the carriage of kerosine oil by boats within certain limits of Calcutta, which led to large despatches from Budge-Budge Station, and partly to the expansion of the trade generally, and the commencement of the bulk oil traffic; oil-seeds were booked in increased quantities, owing to a good crop and a brisk demand in the Calcutta market. The increase of 3,546 tons in weight and Rs. 40,619 in earnings under spices is attributed to general activity in the trade. The tea traffic was also brisk; the increase in quantity and earnings were 1,038 tons and Rs. 27,277 respectively, due to large despatches from Siliguri, the Dooars, and Assam districts *viâ* Goalundo.

The principal fluctuations in the working expenses were increases of Rs. 2,96,420 and Rs. 87,522 under "Maintenance of way, works, and stations" and "Carriage and waggon expenses," respectively, and a decrease of Rs. 3,34,510 under "Special and miscellaneous expenditure." The increase under the first head was principally due to the smaller return of permanent-way materials to stock and to the abnormal expenditure incurred in restoring flood damages on the Dinagepore branch. The increase under "Carriage and waggon expenses" is accounted for by the heavy outlay on repairs and renewals of vehicles during the year.

The decrease under "Special and miscellaneous expenditure" is explained to be due partly to the fact that, owing to additions to stock and improvements in the working of the goods train service, it was not necessary to borrow goods vehicles from the East Indian Railway during the year, and partly to arrear freight charges on coal having been adjusted in the previous year's accounts.

BENGAL CENTRAL RAILWAY (STANDARD GAUGE).

13. The gross earnings amounted to Rs. 7,83,529 against Rs. 7,69,347, the working expenses were Rs. 4,68,537 against Rs. 4,56,444, and the net earnings Rs. 3,14,992 against Rs. 3,12,903.

There was an improvement of 40,106 in the number of passengers carried, and of Rs. 8,913 in earnings. The increase was principally in the third-class traffic, and is accounted for by the Dole Jatra mela and the Baruni bathing festival.

The tonnage of goods carried was more by 4,510 tons, and the earnings by Rs. 5,350. The principal fluctuations under "General merchandise" were an increase of 11,188 tons and Rs. 28,171 in the traffic in spices, and decreases of 10,549 tons and Rs. 27,311 and 4,935 tons and Rs. 14,778 in the traffic in provisions and jute respectively.

The increase in the working expenses was partly due to the increase in the earnings, the line being worked by the Eastern Bengal (State) Railway at a fixed percentage on gross earnings, and partly to the expenditure on the maintenance of the line having been Rs. 2,850 more than in the previous year.

CALCUTTA PORT COMMISSIONERS' RAILWAY (STANDARD GAUGE).

14. The gross earnings rose from Rs. 2,70,645 to Rs. 3,03,387, or by Rs. 32,742, and as the working expenses were more by Rs. 9,601, the net earnings showed an improvement of Rs. 23,141.

There are only two sources of revenue, viz., goods and sundries, the earnings obtained from which amounted to Rs. 2,82,207 against Rs. 2,48,462, and Rs. 21,180 against Rs. 22,183 respectively.

EAST COAST (STATE) RAILWAY, GODAVARI-VIZIANAGRAM SECTION (STANDARD GAUGE).

15. The Godavari-Vizianagram section of the East Coast (State) Railway, including the Cocanada and Vizagapatam branches, a length of $174\frac{1}{2}$ miles, was opened for goods traffic on the 15th July and for passenger traffic on the 21st August 1893, and has been worked by State agency.

The gross earnings of the section from date of opening to the 31st December 1893 amounted to Rs. 2,97,123 and the working expenses to Rs. 2,51,639, the net earnings being Rs. 45,484.

The number of passengers carried was 525,804 and the tonnage of goods 62,381 tons, the earnings derived being Rs. 1,84,581 and Rs. 87,910 respectively.

The Bezwada-Godavari section of the railway, also opened for traffic during the year, was worked by the Nizam's Guaranteed State Railway Company up to the 31st December 1893, and the transactions of the section are included with the Nizam's Guaranteed Railway System.

GREAT INDIAN PENINSULA RAILWAY SYSTEM (STANDARD GAUGE).

16. The gross earnings fell from Rs. 4,06,65,627 to Rs. 3,88,13,741 or by Rs. 18,51,886, and as the working expenses* rose from Rs. 2,00,05,341 to Rs. 2,02,91,908, or by Rs. 2,86,567, the net earnings amounted to Rs. 1,85,21,833 against Rs. 2,06,60,286.

The number of passengers carried increased by 451,425, and the earnings by Rs. 1,69,881. The improvement was principally due to the heavier third-class passenger traffic, which is ascribed to the fairs held at Pandharpur.

The tonnage of goods carried showed a decrease of 120,950 tons, resulting in a falling off in earnings of Rs. 21,16,196.

The principal fluctuations under "General merchandise" were decreases of 46,147 tons and Rs. 15,24,762 in the traffic in raw cotton, and 1,61,427 tons and Rs. 19,29,963 in grain and pulse; the former is chiefly attributed to short crops in Khandeish and the Berars, and the latter to the dulness of the wheat trade and to the depletion of stocks of jawar, bajra, and rice in consequence of the despatch of large quantities to meet the scarcity which prevailed in the Madras Presidency during the previous year. There was, however, an increase of 116,922 tons and Rs. 12,91,224 in the traffic in oilseeds explained to be due to good crops and a steady demand for export.

The increase in the working expenses was principally due to heavier ballasting operations, larger issues of steel rails and pot sleepers, and to the expenditure incurred in the renewal of 15 locomotive engines.

BOMBAY, BARODA, AND CENTRAL INDIA RAILWAY (STANDARD GAUGE).

17. The gross earnings increased from Rs. 1,42,44,478 to Rs. 1,50,96,045, or by Rs. 8,51,567, and as the working expenses† were Rs. 5,95,517 less, the net earnings showed an increase of Rs. 14,47,084.

The increase in the number of passengers carried and in the earnings therefrom amounted to 140,023 and Rs. 2,27,507 respectively. This improvement was chiefly due to improvement in the third-class passenger traffic.

The tonnage of goods carried and the earnings therefrom rose from 1,429,718 tons to 1,474,221 tons and Rs. 92,99,145 to Rs. 98,91,624 respectively.

The principal fluctuations under "General merchandise" were increases of 105,999 tons and Rs. 7,77,689 in the traffic in oil-seeds and 2,556 tons and Rs. 60,881 in sugar, and decreases of 47,445 tons and Rs. 3,79,995 in grain and pulse, and Rs. 98,336 in raw cotton. The decrease in the working expenses occurred chiefly under "Maintenance of way, works and stations" and "Carriage and waggon expenses." The decrease under the former head was due partly to the absence of expenditure on

* Including contributions to the provident fund and expenditure incurred direct by the State on leased lines, but excluding rent paid for the lease of these lines.

† Including contribution to the provident fund.

renewal with steel rails and on repairs to monsoon damages, and partly to the large credits for sale of old rails. The smaller consumption of English stores also contributed towards the decrease. The decrease under "Carriage and waggon expenses" was chiefly due to less renewals and lighter repairs of coaching and goods vehicles.

There was an increase of Rs. 71,987 in the "Traffic expenses," due partly to increased traffic and partly to the additional staff engaged for working the Godhra-Rutlam Railway.

MADRAS RAILWAY (STANDARD GAUGE).

18. The gross earnings increased from Rs. 96,24,669 to Rs. 1,05,05,036, or by Rs. 8,80,367; and as the working expenses were less by Rs. 2,49,243, the net earnings exhibited an improvement of Rs. 11,29,610.

The increase in the number of passengers carried, and in the earnings therefrom, amounted to 773,194 and Rs. 2,21,135 respectively, and is attributed to a general development of the passenger traffic.

The tonnage of goods carried rose from 1,120,273 tons to 1,158,134 tons, and the earnings from Rs. 56,90,712 to Rs. 63,03,468. The principal increases under "General merchandise" were 34,722 tons and Rs. 3,11,543 in the traffic in grain and pulse, and 12,617 tons and Rs. 1,46,153 in raw cotton. The former is explained to be due to an increase in the traffic from foreign railways *via* Bangalore City and to Southern India *via* Erode, and the latter to an improvement in the local traffic, principally from Adoni, Raichur, and Todpatri, and foreign traffic *via* Guntakal. There were also increases of 3,070 tons and Rs. 45,834 and 12,739 and Rs. 72,846 tons in the traffic in spices and oilseeds.

The decrease in the working expenses was principally to the completion of the Pápaghni, Tootha, and Rollananka bridges in the previous year, and to a larger credit for stores returned to stock in the year under review.

THE NIZAM'S GUARANTEED STATE RAILWAY SYSTEM (STANDARD GAUGE).

19. The open mileage of the system is made up of—

	Miles.
The Nizam's Guaranteed State Railway - - -	* 332 $\frac{1}{4}$
Bezwada Extension Railway - - -	21 $\frac{1}{2}$
Bezwada-Godávári section, East Coast Railway -	91
	444 $\frac{3}{4}$

The mean mileage worked during 1893 was 433·25 miles, against 353·77 miles in the previous year, the increase being due to the Bezwada-Godávári section of the East Coast Railway having been worked by the Nizam's Guaranteed State Railway Company from the date of opening, viz., the 20th February 1893.

The gross earnings increased from Rs. 27,80,641 to Rs. 30,61,605, or by Rs. 2,80,964; and as the working expenses† were more by Rs. 55,599, the net earnings showed an improvement of Rs. 2,25,365.

The passengers carried were 414,866 more in number, and the earnings increased by Rs. 1,72,468. The tonnage of goods carried also increased by 75,680 tons, and the earnings therefrom by Rs. 1,02,119.

The increase in the earnings and working expenses is generally due to the Bezwada-Godávári section of the East Coast Railway having been worked as part of the system.

THE GAEKWAR'S PETLÁD RAILWAY (STANDARD GAUGE).

20. The gross earnings rose from Rs. 61,243 to Rs. 63,953, or by Rs. 2,710; and as the working expenses were less by Rs. 3,160, the net earnings showed an increase of Rs. 5,870.

The increase in the number of passengers carried, and the earnings therefrom, amounted to 14,898 and Rs. 2,923 respectively, and was chiefly due to an improvement in the third-class passenger traffic.

* Including 2 $\frac{1}{4}$ miles of the Trimulgherry troop siding which is not used for ordinary public traffic.

† Including contribution to the Provident Fund and expenditure incurred direct by the State on leased lines, but excluding rent paid for the lease of these lines.

The tonnage of goods carried fell from 21,819 tons to 21,478 tons, and the earnings from Rs. 18,584 to Rs. 17,539.

The decrease in the working expenses was due to the decrease in the varying percentage of expenses to gross earnings at which the line is worked by the Bombay, Baroda, and Central India Railway Company.

RÁJPURA-BHÁTINDA RAILWAY (STANDARD GAUGE).

21. The gross earnings amounted to Rs. 6,84,347 against Rs. 5,64,053 and the working expenses to Rs. 3,76,391 against Rs. 3,10,229, resulting in an increase in the net earnings of Rs. 54,132.

The increase in the number of passengers carried, and in the earnings therefrom, amounted to 8,789 and Rs. 11,131 respectively.

The tonnage of goods carried rose from 118,390 tons to 166,269 tons, and the earnings from Rs. 2,40,601 to Rs. 3,49,138. The increase was due chiefly to the traffic in grain and pulse and oilseeds having been abnormally large during the year.

The line is worked by the North-Western (State) Railway at a fixed percentage on the gross earnings.

BENGAL AND NORTH-WESTERN RAILWAY SYSTEM (METRE GAUGE).

22. The gross earnings of the system increased from Rs. 51,23,939 to Rs. 52,95,375, or by Rs. 1,71,436; but as the working expenses were Rs. 1,80,578 more, the net earnings showed a decrease Rs. 9,142.

Taking the two sections separately, the results of working during the years 1892 and 1893 compare as under :—

	Gross Earnings.		Working Expenses.		Net Earnings.	
	1892.	1893.	1892.	1893.	1892.	1893.
	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
Company's section - - -	29,39,077	26,14,545	12,37,823	9,65,845	17,01,254	16,48,700
Tirhoot section - - -	21,84,862	26,80,830	8,69,047	13,21,603	13,15,815	13,59,227

The increase in the number of passengers carried and the earnings therefrom amounted to 231,856 and Rs. 65,846 respectively. This improvement is to be attributed to the general development of traffic.

The tonnage of goods carried increased from 672,558 tons to 693,809 tons, and the earnings from Rs. 25,20,555 to Rs. 25,86,872.

The increase is attributed to a general improvement in the traffic and to the longer lead obtained since the removal, in February 1893, of the waggon ferry from Digha Ghât to Mokameh Ghât, and the despatch of Calcutta traffic from the Company's section by that route instead of *viâ* Digha Ghât.

The increase in the working expenses is said to have been chiefly due to heavy renewals on the Tirhoot section, to the removal of the waggon ferry before mentioned, and to expenditure on the Ajodhya and Bahramghât bridges.

A fourth mixed train was put in between Mozufferpore and Semaria Ghât on 1st April 1893. There are now four mixed trains each way daily between Savan and Semaria Ghât connecting with the East Indian Railway trains at Digha Ghât and Mokameh Ghât.

Out-agencies were opened at Lalganj *viâ* Sarái, Begu Sarái *viâ* Garhara, Madhubani *viâ* Sakri, and Rowsera *viâ* Dalsinghsaái.

RAJPUTANA-MALWA RAILWAY (METRE GAUGE).

23. The gross earnings increased from Rs. 2,24,00,454 to Rs. 2,25,70,685, or by Rs. 1,70,231; but as the working expenses were more by Rs. 95,906, the net earnings showed an improvement of Rs. 74,325 only.

The increase in the number of passengers carried, and in the earnings therefrom, amounted to 1,087,691 and Rs. 3,40,698 respectively, and is ascribed to a general development of the passenger traffic.

The tonnage of goods carried rose from 1,718,250 tons to 1,835,100 tons, and the earnings from Rs. 1,55,67,082 to Rs. 1,55,92,268. The noticeable increases under "General merchandise" occurred in the traffic in manufactured cotton and oilseeds; the increases in the quantity carried and in the earnings being 5,046 tons and Rs. 1,25,307 and 151,237 tons and Rs. 13,63,955 respectively. The increase in manufactured cotton was due to development of traffic in Indian cotton goods. The increases in oilseeds was due to larger exports to Europe. On the other hand, there were heavy decreases in grain and pulse and sugar, the decreases in quantity and earnings being 68,593 tons and Rs. 11,41,237 and 6,323 tons and Rs. 1,96,021 respectively. The reduction in the export of wheat to Europe and the falling off of the local traffic in sugar account for these decreases.

The principal fluctuations in the working expenses were decrease of Rs. 62,445 under "Maintenance of way, works, and stations" and of Rs. 1,49,128 under "Locomotive expenses," and increases of Rs. 1,35,314 and Rs. 92,547 under "Carriage and waggon expenses" and "Traffic expenses" respectively.

The decrease under "Maintenance of way, works, and stations," was principally due to heavier expenditure incurred in 1892 on watering arrangements rendered necessary by scanty rains in Rajputana, while that under "Locomotive expenses" was due partly to the larger train-mileage run in the previous year, and partly to the credit received from the East Indian Railway for rebate on freight on coal. The increase in the "Carriage and waggon expenses" is accounted for by the heavier renewal of vehicles, and that in "Traffic expenses" was due partly to the adjustment of arrear charges for stationery and forms, and partly to credits received in 1892 from the East Indian, Indian Midland, and North-Western (State) Railways for joint station expenses.

PÁLANPUR-DEESA RAILWAY (METRE GAUGE).

24. This line, 17·28 miles in length, was opened for goods traffic on the 8th and for passenger traffic on the 25th November 1893.

The gross earnings from the 8th November to 31st December 1893 amounted to Rs. 4,436, the working expenses to Rs. 1,991, and net earnings to Rs. 2,445. The line is worked by the Bombay, Baroda, and Central India Railway Company at the same percentage of working expenses to gross earnings as prevails on the Rajputana-Malwa Railway system generally.

SOUTHERN MAHRATTA RAILWAY (METRE GAUGE).

25. The mean mileage worked during 1893 was 1,512·29 miles against 1,384·95 miles worked during the previous year. The increase was due to the opening of the following branches:

Guntakal-Mysore Frontier Railway—

Dharmavaram to Hindupur, $49\frac{1}{4}$ miles, opened on the 23rd April 1893.

Hindupur to the Mysore frontier, $7\frac{1}{4}$ miles, opened on the 17th September 1893.

Yesvantpur-Mysore Frontier Railway—

Yesvantpur to Dodballapur, 20 miles, opened on the 15th December 1892.

Dodballapur to the Mysore frontier, $31\frac{1}{2}$ miles, opened on the 17th September 1893.

and to the working of the Guntakal-Dharmavaram section of the Guntakal-Mysore Frontier Railway having been transferred from the South Indian Railway Company to the Southern Mahratta Railway Company from the 1st January 1893.

The gross earnings increased from Rs. 59,41,076 to Rs. 78,20,038, and the working expenses from Rs. 40,85,549 to Rs. 46,66,658. The net earnings thus showed an improvement of Rs. 12,97,853.

The increase in the number of passengers carried and in the earnings therefrom amounted to 1,070,737 and Rs. 4,51,402 respectively. The improvement is ascribed to the increase in the mean mileage worked and to a general development of the passenger traffic.

The tonnage of goods carried rose from 646,879 tons to 924,351 tons, and the earnings from Rs. 31,67,506 to Rs. 45,76,731.

Under "General merchandise" the noticeable increases occurred in the traffic in raw cotton, 45,646 tons and Rs. 3,34,341; in grain and pulse, 103,264 tons and Rs. 4,78,393; and in oilseeds, 47,226 and Rs. 2,55,947.

The increase in raw cotton is attributed to better crops in the first half of 1893, and to the facilities afforded to trade by the special arrangements for quick transit to Bombay *viâ* Poona, and that in grain and pulse was principally due to an improvement in the traffic in jawar and bajra principally at stations on the Mysore section. The improvement in the traffic in oilseeds is ascribed to a good castor seed crop.

The increase in the working expenses is mainly accounted for by the increase in the mean mileage worked.

SOUTH INDIAN, INCLUDING THE PONDICHERRY RAILWAY (METRE GAUGE).

26. The gross earnings increased from Rs. 77,30,337 to Rs. 81,10,429, or by Rs. 3,80,092; and as the working expenses were more by Rs. 95,545, the net earnings showed an improvement of Rs. 2,84,547.

The increase in the number of passengers carried and in the earnings therefrom amounted to 182,421 and Rs. 43,005 respectively. The large increase in the number carried, accompanied by a comparatively small increase in earnings, is due to a large increase in short journey season ticket holders.

The tonnage of goods carried decreased from 1,824,217 tons to 1,492,890 tons, but the earnings increased from Rs. 33,47,720 to Rs. 37,76,548.

The noticeable increases under "General merchandise" were 51,753 tons and Rs. 3,58,231 in the traffic in grain and pulse and 10,049 tons and Rs. 66,606 in sugar.

The increase in grain and pulse was due to failure of crops and scarcity in the Madura and Tinnevely districts, which caused large quantities of grain to be imported from the Mysore, Cuddapah, and Arcot districts, and from the Straits *viâ* Negapatam and Tuticoin.

The increase in the working expenses was chiefly due to heavy expenditure having been incurred in repairs and renewals of engines and vehicles. There was, however, a decrease in the total expenses of the year owing to the Dharmavaram-Guntakal sections having been handed over to the Southern Mahratta Railway Company for working from the 1st January 1893.

BURMA (STATE) RAILWAY SYSTEM (METRE GAUGE).

27. There was an increase of 33·52 miles in the mean mileage worked during 1893, due to the Meiktila branch, 13 miles, having been opened for traffic on the 10th of May 1893, and to the section of the Mu Valley Railway from Shwebo to Wuntho, 100 miles, having been worked throughout the year.

The gross earnings decreased from Rs. 71,00,618 to Rs. 67,22,507, or by Rs. 3,78,111; and as there was an increase of Rs. 7,65,484 in the working expenses, the net earnings fell off from Rs. 33,86,087 to Rs. 22,42,492, or by Rs. 11,43,595.

The number of passengers carried fell from 6,665,624 to 6,607,189 and the earnings from Rs. 38,98,887 to Rs. 35,61,614, or by Rs. 3,37,273. The decrease was chiefly due to the population having travelled less largely owing to the depressed condition of the trade in paddy and to the fact that the movements of population during the previous year were abnormal in consequence of the scarcity then prevailing in Upper Burma.

The tonnage of goods carried was more by 24,369 tons, but the earnings fell off by Rs. 54,679, which is explained to be principally due to falling off in the long distance traffic in husked rice as compared with 1892, when, owing to the scarcity in Upper Burma, large quantities were carried with long leads to Mandalay and elsewhere.

Of the increase in the working expenses, Rs. 5,03,931 occurred under "Maintenance of way, works, and stations," and Rs. 1,47,051 under "Carriage and waggon expenses." The increase under the former head is explained to be principally due to extensive relaying of rails. The increase under the latter head is attributed to more extensive repairs to the carriage and waggon stock.

DEOGHUR RAILWAY (METRE GAUGE).

28. The gross earnings rose from Rs. 26,964 to Rs. 37,809, or by Rs. 10,845; and as the working expenses were more by Rs. 1,449, the net earnings showed an improvement in Rs. 9,396.

The increase in the number of passengers carried and the earnings therefrom amounted to 71,657 and Rs. 9,419 respectively.

The tonnage of goods carried increased from 6,064 tons to 9,359 tons, and the earnings from Rs. 1,597 to Rs. 3,023.

ROHILKUND AND KUMAON RAILWAY SYSTEM (METRE GAUGE).

29. There was an increase in the mean mileage worked during the year of 10·88 miles, due to the opening of the Dudwa branch, $23\frac{1}{2}$ miles in length. The length of line open on the 31st December 1893 was 275·97 miles against 252·30 miles in the previous year.

The gross earnings amounted to Rs. 11,54,786 against Rs. 11,16,484, the working expenses were Rs. 6,98,065 against Rs. 6,43,741, and the net earnings Rs. 4,56,721 against Rs. 4,72,743.

The increase in the number of passengers carried and in the earnings therefrom amounted to 59,859 and Rs. 30,258 respectively, due chiefly to the increase in the mean mileage worked and to a general development of traffic.

The tonnage of goods carried rose from 224,827 tons to 233,844 tons and the earnings from Rs. 4,56,893 to Rs. 4,88,684.

The principal fluctuations under "General merchandise" were increases of 526 tons and Rs. 9,629 in the traffic in grains, 1,354 tons and Rs. 4,417 in oilseeds, 12,207 tons and Rs. 16,116 in stone and lime, and 3,599 tons and Rs. 11,925 in timber, and a decrease of 12,987 tons and Rs. 32,718 in sugar.

The increases are attributable chiefly to the increased mileage worked and to the development of traffic.

The large decrease in the sugar traffic was mainly due to less export of jaggree from Sitapur, Gola, and Lakhimpur station, on account of bad crops.

The principal increases in the working expenses were Rs. 44,736 and Rs. 20,542 under "Maintenance of way, works, and stations" and "Locomotive expenses" respectively. The increase under the former head was chiefly due to the transfer of engineering staff to revenue on the completion of construction works and to larger renewal of sleepers. That under the latter head was due principally to the increased train service during about six months of the year.

Under "Traffic expenses" there was a decrease of Rs. 17,518, which is explained by the fact that arrear charges on account of traffic expenses at joint stations for 1891 were adjusted in the accounts for the year 1892.

BENGAL DOOARS RAILWAY (METRE GAUGE).

30. The section of this railway from the east bank of the Teesta to Malbazar, $26\frac{3}{4}$ miles, was opened for goods traffic on the 15th January, and for passenger traffic on the 1st November, and the branch from Lataguri to Ramshai, $5\frac{1}{2}$ miles, for goods traffic on the 11th June 1893. The mean mileage worked during the year was 28·84 miles.

The gross earnings amounted to Rs. 1,14,812 and the working expenses to Rs. 57,173, the net earnings being Rs. 57,639.

The number of passengers carried was 7,554 and the tonnage of goods lifted 29,633 tons, the earnings from these two sources being Rs. 3,438 and Rs. 98,263 respectively.

DIBRU-SADIYA RAILWAY (METRE GAUGE).

31. The gross earnings decreased from Rs. 5,13,213 to Rs. 5,12,098, or by Rs. 1,115; and as the working expenses were more by Rs. 9,632 the net earnings were less by Rs. 10,747.

The number of passengers carried was 147,041 against 106,158, and the earnings therefrom Rs. 78,801 against Rs. 68,990. The improvement is said to be due to a general development of the passenger traffic.

The tonnage of goods carried amounted to 205,193 tons against 213,030 tons in 1892 and the earnings to Rs. 3,89,772 against Rs. 4,01,179. The decrease was principally due to the reduction of 10 per cent. on the coal earnings on account of the rebate given to the company's colliery department, and less despatch of coal owing to an interruption of traffic caused by the damage done to the Dihing bridge on the colliery section by the sudden and heavy rising of the Dihing river.

The increase in the working expenses was principally due to extensive repairs to coal waggons.

THE GAEKWAR'S MEHSÁNA RAILWAY (METRE GAUGE).

32. The gross earnings increased from Rs. 2,58,963 to Rs. 3,36,859, or by Rs. 77,896; but, as the working expenses were more by Rs. 32,651, the net earnings showed an improvement of Rs. 45,245 only.

The increase in the number of passengers carried and in the earnings therefrom amounted to 82,883 and Rs. 23,839 respectively, and is ascribed to the general development of traffic.

The tonnage of goods carried rose from 98,936 tons to 133,042 tons, and the earnings from Rs. 1,31,820 to Rs. 1,84,607.

The noticeable increases under "General merchandise" occurred in the traffic in grain and pulse and oilseeds, the increases in the quantity carried and in the earnings being 14,178 tons and Rs. 24,832 and 18,043 tons and Rs. 18,703 respectively. The increases are attributed to the general development of traffic.

The increase in the working expenses was due to the increase in the varying percentages of expenses to gross earnings at which the line is worked by the Bombay, Baroda, and Central India Railway Company.

JODHPORE-BICKANEER RAILWAY (METRE GAUGE).

33. *Jodhpore Section*.—The mean mileage of the Jodhpore section worked during the year was 306·30 miles against 247·50 miles worked in the previous year. The increase was due to the opening of the Merta-Road-Kuchaman-Road section, 73 miles, on the 13th March 1893.

The gross earnings amounted to Rs. 8,31,765 against Rs. 9,46,980; the working expenses were Rs. 3,97,870 against Rs. 4,18,039, and the net earnings to Rs. 4,33,895 against Rs. 5,28,941.

The number of passengers carried showed an increase of 105,523, with an increase in the earnings of Rs. 56,658.

The tonnage of goods carried showed a falling off of 59,023 tons and a consequent decrease in the earnings of Rs. 1,78,022.

Bickaneer Section.—The gross earnings on this section amounted to Rs. 66,725 against Rs. 76,548, the working expenses were Rs. 40,990 against Rs. 51,614, and the net earnings to Rs. 26,735 against Rs. 24,904.

The increase in the number of passengers carried and in the earnings therefrom amounted to 15,956 and Rs. 6,132 respectively.

The tonnage of goods carried fell off by 17,604 tons and the earnings by Rs. 17,181.

The decrease in the earnings of both sections is ascribed to the prevalence of scarcity in the districts served by the railway during 1892, in consequence of which there was an abnormal grain traffic in that year.

BHÁVNAGAR-GONDAL-JUNÁGARH-PORBANDAR RAILWAY (METRE GAUGE).

34. The gross earnings increased from Rs. 15,78,178 to Rs. 20,29,929, or by Rs. 4,51,751; and as there was a small increase of Rs. 920 only in the working expenses, the net earnings showed an improvement of Rs. 4,50,831.

There was an increase of 247,969 in the number of passengers carried and of Rs. 1,96,647 in earnings. The improvement is attributed to the unusual movements of passengers in connection with the Rájkot exhibition and on the occasion of a wealthy native marriage. The opening of the Jetalsar-Rájkot railway in 1893 also stimulated the passenger traffic to some extent.

The tonnage of goods carried amounted to 230,140 tons against 180,339 tons and the earnings to Rs. 9,57,818 against Rs. 7,23,958.

The improvement was principally due to the traffic in raw cotton, which showed an increase of 19,614 tons in the quantity carried and of Rs. 1,30,458 in earnings, due to a good cotton crop in Kathiawar and to high rates having prevailed during the year.

The principal fluctuations in the working expenses were a decrease of Rs. 88,953 under "Maintenance of way, works, and stations," and an increase of Rs. 55,389 under "Locomotive expenses." The decrease under the former head was principally due to less charges having been incurred during the year on account of renewal of sleepers, while the increase under the latter head is chiefly accounted for by the fact that the train-mileage run was 81,024 miles more.

JETALSAR-RÁJKOT RAILWAY (METRE GAUGE).

35. This line, $46\frac{1}{4}$ miles in length, was opened for public traffic on the 12th April 1893. The mean mileage worked during the year was 33·44 miles.

The gross earnings amounted to Rs. 1,03,006 and the working expenses to Rs. 52,110 the net earnings being Rs. 50,896.

The line is worked under agreement by the Bhávnagar-Gondal-Junágarn-Porbandar Railway.

WEST OF INDIA PORTUGUESE RAILWAY (METRE GAUGE).

36. The gross earnings increased from Rs. 3,74,681 to Rs. 5,86,705, or by Rs. 2,12,024, and the working expenses from Rs. 3,63,574 to Rs. 4,21,636, or by Rs. 58,062, resulting in an improvement of Rs. 1,53,962 in net earnings.

The number of passengers carried and the earnings therefrom showed increases of 23,945 and Rs. 6,516 respectively.

The tonnage of goods carried rose from 74,192 tons to 1,20,703 tons and the earnings from Rs. 2,15,359 to Rs. 3,63,836.

The increase under "General merchandise" occurred chiefly in the traffic in grain and pulse, 13,165 tons and Rs. 38,852; cotton (raw), 11,532 tons and Rs. 43,201; and oil-seeds, 13,166 tons and Rs. 42,240.

STATEMENT No. 24.

SUMMARY of the PRINCIPAL COMMODITIES carried, and the EARNINGS therefrom, on the STANDARD and METRE GAUGE Railways during the Year 1893, as compared with the previous Year (details given in Appendix G.).

Classification Number.	Description of Commodity.	Quantity.		Earnings.		Quantity.		Earnings.	
		Previous Year.	1893.	Previous Year.	1893.	Increase.	Decrease.	Increase.	Decrease.
		Tons.	Tons.	Rs.	Rs.	Tons.	Tons.	Rs.	Rs.
I.	Coal and coke carried for the public and foreign railways.	2,881,696	3,374,409	91,90,723	97,40,896	492,713	—	5,50,173	—
II.	Cotton, raw - - - -	520,576	580,959	91,45,687	86,26,869	60,383	—	—	5,18,818
III.	Cotton, manufactured - -	395,774	417,536	76,78,352	78,96,108	21,762	—	2,17,755	—
IV.	Drugs and chemicals - - -	45,998	56,748	6,56,273	7,87,935	10,750	—	1,31,662	—
V.	Dyes and tans - - - -	168,613	184,096	19,69,964	21,38,152	15,463	—	1,68,188	—
VI.	Grain and pulse - - - -	5,382,211	5,153,922	3,66,59,689	3,32,03,498	—	228,289	—	34,56,191
VII.	Hides and skins - - - -	129,260	140,607	16,35,405	16,99,110	11,347	—	63,705	—
VIII.	Horns - - - - -	21,009	8,592	1,72,919	81,534	—	12,417	—	91,385
IX.	Jute - - - - -	555,099	580,688	48,48,332	50,46,240	24,989	—	1,97,908	—
X.	Lac - - - - -	23,145	24,602	2,09,456	2,77,216	1,457	—	7,760	—
XI.	Leather, manufactured - -	11,450	10,917	2,11,247	2,10,967	—	533	—	280
XII.	Liquors - - - - -	67,565	72,425	8,45,798	8,75,556	4,860	—	20,758	—
XIII.	Metals - - - - -	374,668	373,859	46,33,188	45,46,336	—	809	—	86,852
XIV.	Oils - - - - -	272,781	360,227	24,78,057	29,93,175	87,446	—	5,15,118	—
XV.	Oil-seeds - - - - -	1,583,117	2,341,547	1,22,60,723	1,85,30,357	758,430	—	62,69,634	—
XVI.	Opium - - - - -	18,376	16,798	4,96,403	4,34,568	—	1,578	—	6,183
XVII.	Paper and paste-board - -	14,466	20,273	2,47,139	3,23,809	5,807	—	76,670	—
XVIII.	Provisions - - - - -	591,650	564,887	60,92,790	57,23,169	—	26,763	—	3,69,621
XIX.	Railway plant and rolling-stock carried for the public and foreign railways.	170,591	257,445	11,40,009	12,58,698	86,854	—	1,18,689	—
XX.	Salt - - - - -	1,357,928	1,367,444	82,71,084	82,97,850	9,816	—	26,166	—
XXI.	Saltpetre, &c. - - - -	78,852	66,793	6,47,104	5,40,188	—	11,559	—	1,06,916
XXII.	Silk, raw - - - - -	2,150	3,446	34,096	75,576	1,296	—	41,480	—
XXIII.	Silk piece-goods - - - -	1,563	784	51,102	22,222	—	779	—	28,880
XXIV.	Spices - - - - -	147,131	178,395	17,65,312	20,01,657	31,264	—	2,36,345	—
XXV.	Stone and lime - - - -	679,471	594,021	16,48,319	15,10,466	—	85,450	—	1,37,853
XXVI.	Sugar - - - - -	1,071,556	1,037,162	78,42,574	76,02,346	—	34,394	—	2,40,228
XXVII.	Tea - - - - -	40,611	51,182	7,92,944	9,26,624	10,671	—	1,33,680	—
XXVIII.	Timber - - - - -	588,380	555,150	28,73,019	22,60,360	—	33,230	—	1,12,659
XXIX.	Tobacco - - - - -	171,932	186,410	16,21,697	17,41,264	14,478	—	1,19,567	—
XXX.	Wool, raw - - - - -	15,198	30,845	4,91,163	7,94,808	15,647	—	3,03,645	—
XXXI.	Wool, unmanufactured - -	20,798	8,484	4,17,069	1,75,766	—	12,314	—	2,42,703
XXXII.	All other articles of merchandise.	1,464,937	1,678,604	1,11,71,785	1,16,67,236	213,667	—	4,95,451	—
	Total - - - - -	18,868,352	20,299,257	13,77,60,022	14,20,10,556	1,430,905	—	42,50,534	—

N.B.—The entries under column "Previous Year" have been revised in accordance with the new classified list issued with P.W.D. Circular No. III. Ry., dated 27th March, 1893.

STATEMENT No. 25.

MILEAGE of RAILWAYS open for TRAFFIC on the 31st December 1893, and the MEAN MILEAGE worked during the Year.

Serial Number.	Railway.	Mileage open (Home Line only).					Mean Mileage worked, including Foreign Lines worked over.
		Laid with Two or more Tracks.	Laid with Single Track.	Total.	Total Length of Sidings.	Total Length of Single Track, including Sidings.	
	STANDARD GAUGE.	Miles.	Miles.	Miles.	Miles.	Miles.	Miles.
	STATE LINES WORKED BY COMPANIES.						
I.	East Indian - - - -	474·24	1,136·49	1,610·73	424·17	2,509·14	(a) 1,634·97
II.	Bengal-Nágpur - - - -	—	862·33	862·33	95·66	957·99	859·76
III.	Indian Midland - - - -	—	677·35	677·35	87·59	764·94	(b) 753·78
IV.	Bhopal-Itársi (British section) -	—	13·11	13·11	2·71	15·82	(c) (13·11)
V.	Godhra-Rutlam - - - -	—	25·00	25·00	1·72	26·72	23·97
VI.	Wardha Coal - - - -	—	44·88	44·88	6·04	50·92	(d) (44·88)
VII.	Dhond-Manmád - - - -	—	145·44	145·44	14·24	159·68	(d) (145·44)
VIII.	Bezawáda Extension (including the Bezawáda-Godávári section of the East Coast Railway).	—	112·49	112·49	11·54	124·03	(e) (100·02)
	Total - - - -	474·24	3,017·09	3,491·33	643·67	4,609·24	3,272·48
	STATE LINES WORKED BY THE STATE.						
IX.	North-Western (State) - - - -	41·26	2,384·23	(f) 2,425·49	(g) 527·39	2,994·14	(h) 2,449·20
X.	Hyderabad-Umarkot - - - -	—	58·91	58·91	3·26	62·17	58·91
XI.	Oudh and Rohilkhand (State) -	—	741·11	741·11	110·27	851·38	792·53
XII.	Eastern Bengal (State) - - - -	55·48	198·27	248·75	95·86	400·09	248·92
XIII.	Bengal Central - - - -	—	125·01	125·01	20·13	145·14	125·01
XIV.	Calcutta Port Commissioners' -	(i) 5·18	1·04	6·22	4·94	20·43	6·22
XV.	East Coast (State) - - - -	—	174·54	174·54	17·48	192·02	81·29
	Total - - - -	101·92	3,678·11	3,780·03	779·33	4,665·37	3,672·08
	LINES WORKED BY GUARANTEED COMPANIES.						
XVIII.	Great Indian Peninsula - - - -	461·92	824·85	1,286·77	243·98	1,992·67	(j) 1,490·08
XIX.	Bombay, Baroda, and Central India.	60·11	400·79	460·90	106·30	627·31	460·90
XX.	Madras - - - -	42·40	796·82	839·22	132·26	1,013·88	839·22
	Total - - - -	564·43	2,022·46	2,586·89	482·54	3,633·86	2,790·20
	ASSISTED COMPANIES.						
XXI.	Delhi-Umballa-Kalka - - - -	—	161·40	161·40	16·77	178·17	161·40
XXII.	Tarkessur - - - -	—	22·23	22·23	2·82	25·05	22·23
	Total - - - -	—	183·63	183·63	19·59	203·22	183·63

(a) Including 1 mile of the Rajputana-Malwa Railway and 23·24 miles of the Eastern Bengal (State) Railway worked over.

(b) Includes IV. and XXV.; also 15·30 miles of the East Indian Railway, 2·89 miles of the Rajputana-Malwa Railway, 1·00 mile of the Oudh and Rohilkhand (State) Railway, and 0·13 mile of the Great Indian Peninsula Railway.

(c) Included with III.

(d) Included with XVIII.

(e) Included with XXVI.

(f) Excluding portion of the old Quetta loop (98·68 miles), which is under reconstruction on a new alignment, but including

6·13 miles (Meean Meer chord and Ferozepore cantonment to Hussainiwala) used for military traffic only.

(g) Excluding the sidings of the old Quetta loop (16·55 miles)—vide remark (f).

(h) Includes XXX.; also 13 miles of the East Indian Railway, Gháziabad to Delhi, but excludes 6·13 miles used for military traffic only,—vide remark (f).

(i) Of this length 2·29 miles are double, 2·21 miles treble, 0·27 mile quadruple, 0·30 mile quintuple, and 0·11 mile sextuple.

(j) Includes VI., VII., XXIII., and XXIV.

N.B.—The mean mileages shown within parentheses are not included in the totals.

STATEMENT No. 25—continued.

MILEAGE of RAILWAYS open for TRAFFIC on the 31st December 1893, and the MEAN MILEAGE worked during the Year—continued.

Serial Number.	Railway.	Mileage open (Home Line only).					Mean Mileage worked, including Foreign Lines worked over.
		Laid with Two or more Tracks.	Laid with Single Track.	Total.	Total Length of Sidings.	Total Length of Single Track, including Sidings.	
	LINES OWNED BY NATIVE STATES AND WORKED BY COMPANIES.	Miles.	Miles.	Miles.	Miles.	Miles.	Miles.
XXIII.	Khámgaon - - - -	—	7·55	7·55	0·87	8·42	(b) (7·55)
XXIV.	Amráoti - - - -	—	5·44	5·44	0·65	6·09	(b) (5·44)
XXV.	Bhopal-Itársi (Native State section).	—	44·00	44·00	8·41	52·41	(a) (44·00)
XXVI.	The Nizam's Guaranteed State -	—	(c) 332·32	(c) 332·32	31·75	364·07	(d) 433·25
XXVII.	The Gaekwar's Petlád - -	—	13·35	13·35	1·77	15·12	13·35
	Total - - - -	—	402·66	402·66	43·45	446·11	446·60
	LINES OWNED BY NATIVE STATES AND WORKED BY STATE RAILWAY AGENCY.						
XXIX.	Rájpura-Bhátinda - -	—	107·94	107·94	14·90	122·84	107·94
XXX.	Jammu and Kashmir (Native State section).	—	15·92	15·92	4·61	20·53	(e) (15·92)
	Total - - - -	—	123·86	123·86	19·51	142·37	107·94
	Total Standard Gauge -	1,140·59	9,427·81	10,568·40	1,988·09	13,701·17	10,472·93
	METRE GAUGE. STATE LINES WORKED BY COMPANIES.						
XXXIII.	Bengal and North Western—Tirhoot Section - - -	—	341·80	341·80	51·75	393·55	} 756·80
	Company's Section - - -	—	414·50	414·50	44·00	458·50	
XXXIV.	Rohilkhand and Kumaon (Lucknow-Barcelly section).	—	222·05	222·05	22·51	244·56	(f) (209·26)
XXXV.	Rajputana-Malwa - - -	1·14	1,672·88	1,674·02	(g) 255·12	1,930·28	1,674·02
XXXVI.	Pálanpur-Deesa - - -	—	17·28	17·28	0·85	18·13	2·56
XXXVII.	Southern Mahratta - - -	—	1,043·70	1,043·70	107·73	1,151·43	(h) 1,512·29
XXXVIII.	Guntakal-Mysore Frontier -	—	119·50	119·50	9·60	129·10	(i) (99·22)
XXXIX.	Southern Mahratta (Mysore section) (j).	—	296·00	296·00	25·72	321·72	(i) (296·00)
XL.	South Indian (k) - - -	—	1,041·51	1,041·51	118·14	1,159·65	(l) 1,049·31
	Total - - - -	1·14	5,169·22	5,170·36	635·42	5,806·92	4,994·48
	STATE LINES WORKED BY THE STATE.						
XLIII.	Eastern Bengal (State)—Northern and Behar sections (including the Kaunia-Dharlla, 2' 6" gauge, branch).	—	478·04	478·04	77·85	555·89	444·62
	Dacca section - - -	—	85·92	85·92	13·63	99·55	85·92
XLIV.	Burma (State) - - -	9·00	720·89	729·89	118·69	847·58	725·33
	Total - - - -	9·00	1,284·85	1,293·85	200·17	1,503·02	1,255·87
	ASSISTED COMPANIES.						
XLVI.	Deoghur - - -	—	4·79	4·79	0·62	5·41	4·79
XLVII.	Rohilkhand and Kumaon (Company's section).	—	53·92	53·92	4·59	58·51	(m) 263·18
XLVIII.	Bengal Dooars - - -	—	32·25	32·25	5·23	37·48	28·84
XLIX.	Dibru-Sadiya - - -	—	77·50	77·50	8·88	86·38	77·50
	Total - - - -	—	168·46	168·46	19·32	187·78	374·31

(a) Included with III.
 (b) Included with XVIII.
 (c) Including 2·19 miles (Trimulgherry troop siding) used for military traffic only.
 (d) Including VIII. and 3·10 miles worked over twice by each train, but excluding 2·19 miles used for military traffic only.—vide remark (c).
 (e) Included with IX.
 (f) Included with XLVII.
 (g) Including 3·07 miles of main line laid on the standard gauge.

(h) Includes XXXVIII., XXXIX., LII., LIII., and LIV.
 (i) Included with XXXVII.
 (j) Vide Appendix C. for an explanation of the decrease in mileage.
 (k) The decrease as compared with the last year's report is due to Guntakal-Dharmavaram section having now been shown separately, vide No. XXXVIII.
 (l) Includes LXI.
 (m) Includes XXXIV.

N.B.—The mean mileages shown within parentheses are not included in the totals.

STATEMENT No. 25—concluded.

MILEAGE of RAILWAYS open for TRAFFIC on the 31st December 1893, and the MEAN MILEAGE worked during the Year—concluded.

Serial Number.	Railway.	Mileage open (Home Line only).					Mean Mileage worked, including Foreign Lines worked over.
		Laid with Two or more Tracks.	Laid with Single Track.	Total.	Total Length of Sidings.	Total Length of Single Track, including Sidings.	
	LINES OWNED BY NATIVE STATES AND WORKED BY COMPANIES.	Miles.	Miles.	Miles.	Miles.	Miles.	Miles.
LI.	The Gaekwar's Mehsána - -	—	92·63	92·63	11·64	104·27	92·63
LII.	Kolhápúr - - -	—	29·07	29·07	1·70	30·77	(a) (29·07)
LIII.	Yesvantpur-Mysore Frontier - -	—	51·35	51·35	3·87	55·22	(a) (29·05)
	Mysore-Nanjangúd - -	—	15·25	15·25	1·00	16·25	(a) (15·25)
	Total - - -	—	188·30	188·30	18·21	206·51	92·63
	LINES OWNED AND WORKED BY NATIVE STATES.						
LV.	Jodhpore-Bickaneer— Jodhpore Section - -	—	320·50	320·50	9·00	329·50	306·30
	Bickaneer Section - -	—	43·50	43·50	1·00	44·50	43·50
LVI.	Bhávnapur - Gondal - Junágarh - Porbandar (b).	—	333·65	333·65	41·45	375·10	333·55
LVII.	Jetalsar-Rajkot - -	—	46·23	46·23	2·74	48·97	33·44
	Total - - -	—	743·88	743·88	54·19	798·07	716·79
	FOREIGN LINES.						
LX.	West of India Portuguese - -	—	51·00	51·00	11·85	62·85	51·00
LXI.	Pondicherry - - -	—	7·80	7·80	1·82	9·62	(c) (7·80)
	Total - - -	—	58·80	58·80	13·67	72·47	51·00
	Total Metre Gauge - -	10·14	7,613·51	7,623·65	940·98	8,574·77	7,485·08
	SPECIAL GAUGES.						
	STATE LINE WORKED BY THE STATE.						
LXIII.	Jorhát, (2' 0") - - -	—	28·00	28·00	1·80	29·80	25·97
	ASSISTED COMPANY.						
LXIII.	Darjeeling-Himalayan (2' 0") -	—	51·00	51·00	2·50	53·50	51·00
	LINE OWNED BY NATIVE STATE AND WORKED BY COMPANY.						
LXIV.	The Gaekwar's Dabhoi (2' 6") -	—	71·66	71·66	4·91	76·57	71·66
	LINE OWNED BY NATIVE STATE AND WORKED BY STATE RAILWAY AGENCY.						
LXV.	Cooch Behar (2' 6") - -	—	22·12	22·12	1·14	23·26	6·55
	LINE OWNED AND WORKED BY NATIVE STATE.						
LXVI.	Morvi (2' 6") - - -	—	94·00	94·00	4·00	98·00	94·00
	Total Special Gauges - -	—	266·78	266·78	14·35	281·13	249·18
	TOTAL OF ALL RAILWAYS	1,150·73	17,308·10	18,458·83	2,943·42	22,557·07	18,207·19

(a) Included with XXXVII.

(b) Including 4·50 miles of dock estates and quarry lines constructed and maintained by the States themselves.

(c) Included with XL.

N.B.—The mean mileages shown within parentheses are not included in the totals.

STATEMENT No. 26.

PASSENGER TRAFFIC on the STANDARD and METRE GAUGE RAILWAYS during the Year
ending the 31st December 1893.

STATEMENT

PASSENGER TRAFFIC on the STANDARD and METRE GAUGE

Serial Number.	Railway.	First Class.		Second Class.		Third or Intermediate Class.	
		Number.	Earnings.	Number.	Earnings.	Number.	Earnings.
			Rs.		Rs.		Rs.
	<i>Standard Gauge.</i>						
	STATE LINES WORKED BY COMPANIES.						
I.	East Indian - - - -	54,100	5,45,422	179,208	7,13,942	864,082	8,78,214
II.	Bengal-Nágpur - - - -	5,086	25,217	20,971	31,746	33,945	16,610
III.	Indian Midland (a) - - - -	10,422	92,448	33,302	1,15,182	416,959	5,01,710
V.	Godhra-Rutlam - - - -	250	295	1,347	713	-	-
	Total - - - -	69,858	6,63,382	234,828	8,61,583	1,314,936	13,96,534
	STATE LINES WORKED BY THE STATE.						
IX.	North-Western (State) (b) - - - -	41,901	3,04,448	137,326	4,28,886	474,833	5,28,912
X.	Hyderabad-Umarkot - - - -	498	745	2,134	1,214	17,271	6,310
XI.	Oudh and Rohilkhand (State) - - - -	20,637	1,11,488	63,828	1,50,612	119,969	1,15,136
XII.	Eastern Bengal (State) - - - -	41,841	93,976	118,247	1,01,383	851,251	3,23,564
XIII.	Bengal Central - - - -	2,447	4,220	32,210	15,748	158,850	71,440
XIV.	Calcutta Port Commissioners (c) - - - -	-	-	-	-	-	-
XV.	East Coast (State) - - - -	1,598	3,637	9,920	8,841	-	-
	Total - - - -	108,922	5,18,514	363,665	7,06,684	1,622,174	10,45,362
	LINES WORKED BY GUARANTEED COMPANIES.						
XVIII.	Great Indian Peninsula (d) - - - -	73,589	4,29,908	556,702	6,54,769	633,227	10,42,427
XIX.	Bombay, Baroda, and Central India - - - -	105,968	1,41,604	1,037,144	3,48,588	480,016	7,78,615
XX.	Madras - - - -	19,392	1,70,338	67,687	2,14,420	-	-
	Total - - - -	198,949	7,32,850	1,661,533	12,17,777	1,113,243	18,21,042
	ASSISTED COMPANIES.						
XXI.	Delhi-Umballa-Kalka - - - -	6,596	54,022	16,127	57,069	27,311	31,200
XXII.	Tarkessur - - - -	423	392	3,223	1,405	99,916	24,107
	Total - - - -	7,019	54,414	19,350	58,494	127,227	55,307
	LINES OWNED BY NATIVE STATES AND WORKED BY COMPANIES.						
XXVI.	The Nizam's Guaranteed State (e) - - - -	7,082	49,779	35,299	65,931	333,149	1,71,933
XXVII.	The Gaekwar's Petlád - - - -	234	198	2,129	840	-	-
	Total - - - -	7,316	49,977	37,428	66,771	333,149	1,71,933
	LINE OWNED BY NATIVE STATE AND WORKED BY STATE RAILWAY AGENCY.						
XXIX.	Rájpura-Bhátinda - - - -	1,880	3,326	4,035	3,847	27,888	11,997
	Total - - - -	1,880	3,326	4,035	3,847	27,888	11,997
	Total Standard Gauge - - - -	398,944	20,22,463	2,320,839	29,15,156	4,538,617	45,02,175

(a) Including the Bhopal-Itarsi Railway.
(b) Including the Jammu and Kashmir Railway (Native State Section).
(c) There is no passenger traffic on this line.

No. 26.

RAILWAYS during the Year, ending the 31st December 1893.

Lowest (Third or Fourth) Class.		Total Passenger Traffic.		Other Coaching Traffic, less outstandings irrecoverable.	Total Coaching Traffic.*	Railway.
Number.	Earnings.	Number.	Earnings.			
	Rs.		Rs.	Rs.	Rs.	
<i>Standard Gauge.</i>						
STATE LINES WORKED BY COMPANIES.						
14,784,928	1,26,33,755	15,882,268	1,47,71,333	18,47,880	1,60,19,163	East Indian.
2,138,256	10,91,691	2,198,258	11,65,264	1,69,077	13,34,341	Bengal-Nágpur.
1,501,942	10,74,140	1,762,625	17,83,480	2,85,737	20,69,217	Indian Midland (a).
96,407	25,407	98,004	26,415	2,209	28,624	Godhra-Rutlam.
18,321,553	1,48,24,993	19,941,155	1,77,46,492	23,04,853	2,00,51,345	Total.
STATE LINES WORKED BY THE STATE.						
10,608,348	70,15,168	11,262,408	82,77,414	12,75,429	95,52,843	North-Western (State) (b).
364,079	60,053	383,982	68,322	3,528	71,850	Hyderabad-Umarkot.
5,458,057	31,85,249	5,662,491	35,62,485	3,46,298	39,08,783	Oudh and Rohilkand (State).
5,335,409	16,20,037	6,346,748	21,38,960	2,66,558	24,05,548	Eastern Bengal (State).
1,428,261	4,51,082	1,621,768	5,42,490	18,766	5,61,256	Bengal Central.
—	—	—	—	—	—	Calcutta Port Commissioners (c).
514,286	1,72,103	525,804	1,84,581	11,680	1,96,261	East Coast (State).
23,708,440	1,25,03,692	25,803,201	1,47,74,252	19,22,289	1,66,96,541	Total.
LINES WORKED BY GUARANTEED COMPANIES.						
12,160,464	56,87,559	13,423,982	78,05,663	14,29,424	92,35,087	Great Indian Peninsula (d).
13,128,532	30,79,362	14,751,660	43,48,169	6,07,545	49,55,714	Bombay, Baroda, and Central India.
8,739,177	30,71,538	9,826,256	34,56,296	5,28,285	39,84,581	Madras.
35,028,173	1,18,38,459	38,001,898	1,56,10,128	25,65,254	1,81,75,382	Total.
ASSISTED COMPANIES.						
953,389	4,82,044	1,003,423	6,24,355	1,21,785	7,46,140	Delhi-Umballa-Kalka.
969,988	2,32,155	1,072,650	2,58,059	5,093	2,63,152	Tarakessur.
1,922,477	7,14,199	2,076,073	8,82,414	1,26,878	10,09,292	Total.
LINES OWNED BY NATIVE STATES AND WORKED BY COMPANIES.						
1,243,804	6,18,407	1,619,334	9,06,050	1,02,932	10,08,982	The Nizam's Guaranteed State (e).
243,176	42,429	245,539	43,467	1,878	45,345	The Gaekwar's Petlād.
1,486,980	6,60,836	1,864,873	9,49,517	1,04,810	10,54,327	Total.
LINE OWNED BY NATIVE STATES AND WORKED BY STATE RAILWAY AGENCY.						
733,831	2,92,695	767,634	3,11,865	19,070	3,30,935	Rājputra-Bhātinda.
733,831	2,92,695	767,634	3,11,865	19,070	3,30,935	Total.
81,201,434	4,08,34,874	88,454,834	5,02,74,668	70,43,154	5,73,17,322	Total Standard Gauge.

(d) Including the Wardha Coal, Dhond-Manmád, Khámgaon, and Amráoti Railways.

(e) Including the Bezwáda extension and the Bezwáda-Godávari Section of the East Coast Railway.

* See also Statements Nos. 19 and 20.

STATEMENT

PASSENGER TRAFFIC ON THE STANDARD AND METRE GAUGE

Serial Number.	Railway.	First Class.		Second Class.		Third or Intermediate Class.	
		Number.	Earnings.	Number.	Earnings.	Number.	Earnings.
	<i>Metre Gauge.</i>		Rs.		Rs.		Rs.
	STATE LINES WORKED BY COMPANIES.						
XXXIII.	Bengal and North-Western—						
	Tirhoot Section - - - - }	15,310	45,305	22,150	38,937	66,853	33,265
	Company's Section - - - - }						
XXXV.	Rajputana-Malwa - - - - -	17,115	1,22,467	74,465	1,95,013	250,084	2,95,674
XXXVI.	Pálanpur-Decsa - - - - -	96	102	525	195	—	—
XXXVII.	Southern Mahratta (a) - - - -	14,582	85,981	52,024	1,19,023	—	—
XL.	South Indian (b) - - - - -	20,213	66,384	178,930	1,56,440	—	—
	Total - - - - -	67,316	3,20,239	328,094	5,09,608	316,937	3,28,939
	STATE LINES WORKED BY THE STATE.						
XLIII.	Eastern Bengal (State)—						
	Northern and Behar Sections, (including the Kaunia-Dharidá 2' 6" gauge branch). -	8,495	54,590	27,606	63,995	255,771	1,20,429
	Dacca Section - - - - -	3,755	4,730	11,045	8,673	91,720	24,243
XLIV.	Burma (State) - - - - -	19,518	85,892	213,546	1,74,799	—	—
	Total - - - - -	31,768	1,45,212	252,197	2,47,467	347,491	1,44,672
	ASSISTED COMPANIES.						
XLVI.	Deoghur - - - - -	939	470	—	—	264,022	34,316
XLVII.	Rohilkund and Kumaon (Company's section) (c)	4,006	29,669	13,765	52,647	8,403	6,970
XLVIII.	Bengal Dooars - - - - -	107	381	154	368	—	—
XLIX.	Dibru-Sadiya - - - - -	3,695	8,364	2,333	3,160	—	—
	Total - - - - -	8,747	38,884	16,252	56,175	272,425	41,286
	LINE OWNED BY NATIVE STATE AND WORKED BY COMPANY.						
LI.	The Gaekwar's Mehsána - - - -	388	756	3,295	2,939	—	—
	Total - - - - -	388	756	3,295	2,939	—	—
	LINE OWNED AND WORKED BY NATIVE STATES.						
LV.	Jodhpore-Bickaneer—						
	Jodhpore Section - - - - -	961	6,730	4,688	9,820	—	—
	Bickaneer Section - - - - -	131	498	478	610	—	—
LVI.	Bhávnagar-Gondal-Junágarh-Porbandar -	5,029	17,750	31,834	41,671	—	—
LVII.	Jetalsar-Rájkot - - - - -	Detailed information not furnished.				—	—
	Total - - - - -	6,121	24,978	37,000	52,101	—	—
	FOREIGN LINE.						
LX.	West of India Portuguese - - - -	2,038	2,002	9,194	3,991	—	—
	Total - - - - -	2,038	2,002	9,194	3,991	—	—
	Total Metre Gauge - - - - -	116,878	5,32,071	646,032	8,72,281	996,853	5,14,897

(a) Including the Guntakal-Mysore frontier, the Southern Mahratta (Mysore section), Kolhápúr, Yesvantpur-Mysore frontier, and Mysore. Nanjangúd Railways.

(b) Including the Pondicherry Railway.

No. 26—concluded.

RAILWAYS during the Year ending the 31st December 1893—concluded.

Lowest (Third or Fourth) Class.		Total.		Other Coaching Traffic, less outstandings irrecoverable.	Total Coaching Traffic.*	Railway.
Number.	Earnings.	Number.	Earnings.			
	Rs.		Rs.	Rs.	Rs.	
<i>Metre Gauge.</i>						
STATE LINES WORKED BY COMPANIES.						
Bengal and North-Western—						
4,969,010	18,28,564	5,073,323	19,46,071	1,37,416	20,83,487	{ Tirhoot Section.
9,728,809	53,92,788	10,070,473	60,05,942	6,30,011	66,35,953	{ Company's Section.
8,353	1,398	8,974	1,695	213	1,908	Rajputana-Malwa.
5,769,058	26,35,346	5,885,664	28,40,350	2,32,737	31,33,087	Pálanpur-Deesa.
10,536,864	37,15,043	10,736,007	39,37,867	2,25,841	41,63,708	Southern Mahratta (a).
						South Indian (b).
31,012,094	1,35,73,139	31,724,441	1,47,31,925	12,86,218	1,60,18,143	Total.
STATE LINES WORKED BY THE STATE.						
Eastern Bengal (State)—						
2,151,699	11,52,542	2,443,571	13,91,556	1,81,580	15,73,136	Northern and Behar Sections (including the Kaunia-Dharidá 2' 6" gauge branch).
833,816	2,47,024	940,356	2,84,670	21,856	3,06,526	Dacca Section.
6,374,125	33,00,923	6,607,189	35,61,614	1,70,005	37,31,619	Burma (State).
9,359,040	47,00,489	9,991,096	52,37,840	3,73,441	56,11,281	Total.
ASSISTED COMPANIES.						
—	—	264,961	34,786	—	34,786	Deoghur.
1,024,489	3,81,258	1,050,663	4,70,544	63,937	5,34,481	Rohilkund and Kumaon (Company's Section) (c).
7,293	2,689	7,554	3,438	574	4,012	Bengal Doocars.
141,013	67,277	147,041	78,801	13,405	92,206	Dibru-Sadiya.
1,172,795	4,51,224	1,470,219	5,87,569	77,916	6,65,485	Total.
LINE OWNED BY NATIVE STATE AND WORKED BY COMPANY.						
569,902	1,38,414	573,585	1,42,109	8,512	1,50,621	The Gaekwar's Melsána.
569,902	1,38,414	573,585	1,42,109	8,512	1,50,621	Total.
LINES OWNED AND WORKED BY NATIVE STATES.						
Jodhpore-Bickáneer—						
572,929	3,27,753	578,578	3,44,303	41,193	3,85,496	Jodhpore Section.
65,020	26,499	65,629	27,607	3,759	31,366	Bickaneer Section.
1,555,281	8,96,853	1,592,144	9,56,274	62,325	10,18,599	Bhávsnagar-Gondal-Junágarh-Porbandar.
—	—	—	—	—	81,440	Jetalsar-Rájkot.
2,193,230	12,51,105	2,236,351	13,28,184	1,07,277	(d) 15,16,901	Total.
FOREIGN LINE.						
West of India Portuguese.						
238,711	49,372	249,943	55,365	6,614	61,979	Total.
238,711	49,372	249,943	55,365	6,614	61,979	Total.
44,546,372	2,01,63,743	46,245,635	2,20,82,992	18,59,978	(d) 2,40,24,410	Total Metre Gauge.

(c) Including the Rohilkund and Kumaon (Lucknow-Bareilly section).

(d) Including Rs. 81,440 not shown in any of the previous columns.

* See also Statements Nos. 19 and 29.

STATEMENT

GOODS TRAFFIC ON THE STANDARD AND METRE

Serial Number.	Railway.	General Merchandise.		Military Stores.		Railway Materials for Construction (Home Line only).		Coal and Coke for the Public and Foreign Railways.		Coal and Coke for Construction (Home Line only).	
		Tons.	Earnings.	Tons.	Earnings.	Tons.	Earnings.	Tons.	Earnings.	Tons.	Earnings.
	<i>Standard Gauge.</i>		Rs.		Rs.		Rs.		Rs.		Rs.
	STATE LINES WORKED BY COMPANIES.										
I.	East Indian - - -	2,587,820	2,32,71,388	8,391	3,71,405	174,959	1,57,400	1,920,239	72,69,963	1,945	7,293
II.	Bengal-Nagpur - - -	487,390	38,37,115	395	8,516	125,197	1,38,983	512,487	4,17,318	6,475	20,071
III.	Indian Midland (a) - -	345,363	25,68,102	918	14,451	8,923	20,870	3,960	8,864	83	194
V.	Godhra-Rutlam - - -	28,411	27,348	—	—	13,486	5,741	2	3	286	122
	Total - - -	3,448,984	2,97,08,853	9,707	3,94,372	322,555	3,22,994	2,436,688	76,96,148	8,789	27,680
	STATE LINES WORKED BY THE STATE.										
IX.	North-Western (State) (b) -	1,850,822	1,64,75,732	30,360	61,5,337	764,726	3,36,590	25,894	89,459	9,185	30,110
X.	Hyderabad-Umarkot - -	26,586	54,400	170	141	5,650	2,577	—	—	—	—
XI.	Oudh and Rohilkhand (State) -	810,359	37,33,769	3,244	38,900	210,444	3,43,896	23,969	85,894	—	—
XII.	Eastern Bengal (State) - -	831,593	40,06,552	640	2,248	12,040	18,019	322,185	84,353	20	23
XIII.	Bengal Central - - -	85,921	1,89,314	389	412	82	27	20,390	21,184	—	—
XIV.	Calcutta Port Commissioners' -	Details not furnished.		—	—	—	—	—	—	—	—
XV.	East Coast (State) - - -	9,550	37,742	—	1	49,050	47,179	2	6	1,009	623
	Total - - -	3,614,831	2,44,93,509	34,803	6,57,039	1,041,992	7,48,288	392,440	2,80,896	10,214	30,761
	LINES WORKED BY GUARANTEED COMPANIES.										
XVIII.	Great Indian Peninsula (c) -	1,990,341	2,70,32,439	9,114	2,13,901	46,469	37,691	89,645	2,51,446	34	117
XIX.	Bombay, Baroda, and Central India.	1,233,838	90,34,731	576	18,916	26,397	36,226	42,024	2,32,475	459	782
XX.	Madras - - - - -	809,129	57,58,177	1,580	65,138	11,308	21,570	71,399	2,95,596	—	—
	Total - - -	4,033,308	4,18,25,347	11,270	2,97,955	84,164	95,487	203,068	7,79,517	493	899
	ASSISTED COMPANIES.										
XXI.	Delhi-Umballa-Kalka - - -	95,357	4,09,016	1,414	17,526	748	1,038	3,279	8,849	—	—
XXII.	Tarkessur - - - - -	16,274	17,004	—	—	298	73	2,135	971	—	—
	Total - - -	111,631	4,26,020	1,414	17,526	1,046	1,111	5,414	9,820	—	—
	LINES OWNED BY NATIVE STATES AND WORKED BY COMPANIES.										
XXVI.	The Nizam's Guaranteed State (a).	199,402	12,15,027	759	11,466	3,697	24,546	118,820	5,76,178	73	485
XXVII.	The Gaekwar's Petlad - - -	21,179	17,088	—	—	—	—	—	—	—	—
	Total - - -	220,581	12,32,065	759	11,466	3,697	24,546	118,820	5,76,178	73	485
	LINE OWNED BY NATIVE STATE AND WORKED BY STATE RAILWAY AGENCY.										
XXIX.	Rajpura-Bhatinda - - -	117,769	3,11,088	1,776	23,962	2,555	656	1,292	1,238	—	—
	Total - - -	117,769	3,11,088	1,776	23,962	2,555	656	1,292	1,238	—	—
	Total Standard Gauge -	11,547,104	9,79,95,830	59,729	14,02,320	1,456,019	11,93,082	3,157,722	93,43,797	19,569	59,825

(a) Including the Bhopal-Itarsi Railway.

(b) Including the Jammu and Kashmir Railways.

(c) Including the Wardha Coal, Dhond-Manmad, Khangaon, and the Amraoti Railways.

No. 27.

GAUGE RAILWAYS during the Year ending the 31st December 1893.

Coal and Coke for Revenue only.		Revenue Stores other than Coal and Coke.		Live Stock.		Rents, Miscellaneous, &c. Less Outstandings Irrecoverable.	Total.		Railway.	Serial Number.
Tons.	Earnings.	Tons.	Earnings.	Tons.	Earnings.		Tons.	Earnings.*		
	Rs.		Rs.		Rs.	Rs.		Rs.	Standard Gauge.	
									STATE LINES WORKED BY COMPANIES.	
268,324	8,39,113	375,709	3,84,927	3,305	1,22,829	87,385	5,340,682	3,25,11,703	East Indian	I.
35,701	1,17,602	74,928	52,241	65	2,179	14,280	1,242,641	46,08,305	Bengal-Nagpur	II.
36,702	91,600	162,510	37,063	239	7,564	4,812	558,698	27,53,420	Indian Midland (a)	III.
153	65	—	—	27	21	87	42,365	33,287	Godhra-Rutlam	V.
340,880	10,48,280	613,147	4,74,231	3,636	1,32,593	1,06,564	7,184,396	3,99,06,715	Total.	
									STATE LINES WORKED BY THE STATE.	
159,830	3,48,519	2,087,463	11,01,020	2,860	70,522	51,956	4,929,940	1,91,19,245	North-Western (State) (b)	IX.
2	1	879	437	—	—	319	33,237	57,875	Hyderabad-Umarkot	X.
40,765	1,39,100	317,347	88,748	336	9,057	14,032	1,406,464	44,53,396	Oudh and Rohilkhand (State)	XI.
38,854	38,443	21,539	21,724	45	447	36,941	1,226,916	42,08,750	Eastern Bengal (State)	XII.
5,524	1,597	1,206	610	4	37	483	113,516	2,13,664	Bengal Central	XIII.
—	—	—	—	—	—	—	—	2,82,207	Calcutta Port Commissioners'	XIV.
2,223	1,526	547	549	—	20	259	62,381	87,910	East Coast (State)	XV.
246,198	5,29,186	2,428,981	12,13,088	3,045	80,083	1,03,990	7,772,504	2,84,23,047	Total.	
									LINES WORKED BY GUARANTEED COMPANIES.	
206,878	6,18,558	489,398	8,84,052	8,466	1,23,863	42,113	2,840,355	2,92,03,680	Great Indian Peninsula (c)	XVIII.
52,955	1,14,430	99,165	1,06,860	18,907	3,36,659	10,545	1,474,221	98,91,624	Bombay, Baroda, and Central India.	XIX.
18,076	21,094	245,402	97,168	1,240	30,585	14,140	1,158,134	63,03,468	Madras	XX.
277,969	7,54,082	833,965	10,88,080	28,533	4,90,607	66,798	5,472,710	4,58,98,772	Total.	
									ASSISTED COMPANIES.	
—	—	—	—	142	1,636	1,914	100,940	4,39,979	Delhi-Umballa-Kalka	XXI.
2	2	1,115	361	—	—	846	19,824	18,757	Tarakesur	XXII.
2	2	1,115	361	142	1,636	2,260	120,764	4,58,736	Total.	
									LINES OWNED BY NATIVE STATES AND WORKED BY COMPANIES.	
19,905	52,644	161,553	38,065	355	4,920	6,596	504,564	19,29,927	The Nizam's Guaranteed State (d)	XXVI.
158	45	—	—	141	259	197	21,478	17,539	The Gaekwar's Petlad	XXVII.
20,063	52,689	161,553	38,065	496	5,179	6,793	526,042	19,47,466	Total.	
									LINE OWNED BY NATIVE STATE AND WORKED BY STATE RAILWAY AGENCY.	
870	1,079	41,930	8,350	77	315	2,502	166,269	3,49,138	Rajpura-Bhatinda	XX.
870	1,079	41,930	8,350	77	315	2,502	166,269	3,49,138	Total.	
885,922	23,85,318	4,080,691	22,22,175	35,929	7,10,413	2,88,907	21,242,685	11,64,83,874	Total Standard Gauge.	

(d) Includes the Bezvada Extension and the Bezvada-Godavari section of the East Coast Railway.

* See also Statements Nos. 19 and 29.

STATEMENT

GOODS TRAFFIC on the STANDARD and METRE

Serial Number.	Railway.	General Merchandise.		Military Stores.		Railway Materials for Construction (Home Line only).		Coal and Coke for the Public and Foreign Railways.		Coal and Coke for Construction (Home Line only).	
		Tons.	Earnings.	Tons.	Earnings.	Tons.	Earnings.	Tons.	Earnings.	Tons.	Earnings.
	<i>Metre Gauge.</i>		Rs.		Rs.		Rs.		Rs.		Rs.
	STATE LINES WORKED BY COMPANIES.										
XXXIII.	Bengal and North-Western—Tirhoot Section - - -	612,024	24,48,210	—	—	6,502	32,614	25,408	35,672	—	—
	Company's Section - - -										
XXXV.	Rajputana-Malwa - - -	1,568,079	1,47,36,050	5,391	93,529	102,780	2,09,919	7,607	45,544	2,468	10,980
XXXVI.	Pálanpur-Deesa - - -	1,003	1,927	26	42	993	535	—	—	—	—
XXXVII.	Southern Mahratta (a) - - -	732,968	41,48,435	1,083	15,256	37,809	56,035	11,005	69,974	—	—
XL.	South Indian (b) - - -	842,556	35,92,478	161	4,224	142,386	32,452	8,222	7,693	—	—
	Total - - -	3,756,530	2,49,27,150	6,651	1,13,051	290,470	3,31,555	52,242	1,58,888	2,468	10,980
	STATE LINES WORKED BY THE STATE.										
XLIII.	Eastern Bengal (State)—Northern and Behar Sections (including the Kaunia-Dharla, 2' 6" gauge, Branch). Dacca Section - - -	394,829	24,43,139	89	303	51,220	36,147	10,295	37,772	28	34
		41,987	1,07,001	4	20	236	34	641	1,287	29	4
XLIV.	Burma (State) - - -	579,979	26,05,331	1,803	43,092	37,798	12,469	568	413	1,190	326
	Total - - -	1,016,795	51,55,471	1,896	43,415	89,254	48,650	11,504	39,472	1,247	394
	ASSISTED COMPANIES.										
XLVI.	Deoghur - - - - -	9,093	2,892	—	—	—	—	—	—	266	(c)
XLVII.	Rohilkund and Kumaon (Company's Section) (d). - - -	201,074	4,51,704	686	4,561	48,071	13,047	111	156	11	20
XLVIII.	Bengal Doonars - - - -	11,001	89,737	—	—	15,860	4,452	606	3,256	—	—
XLIX.	Dibru-Sadiya - - - - -	33,308	1,98,075	—	—	—	—	158,320	1,87,680	—	—
	Total - - - - -	254,476	7,42,498	686	4,561	63,931	17,469	169,037	1,91,092	277	20
	LINE OWNED BY NATIVE STATE AND WORKED BY COMPANY.										
LI.	The Gackwar's Mésána - - -	132,648	1,83,602	3	8	36	15	11	22	—	—
	Total - - - - -	132,648	1,83,602	3	8	36	15	11	22	—	—
	LINES OWNED AND WORKED BY NATIVE STATES.										
LV.	Jodhpore-Bickaneer—Jodhpore Section - - -	65,981	3,96,937	11	179	32,077	15,265	115	1,086	12	23
	Bickaneer Section - - -	10,183	26,865	4	35	193	74	68	149	—	—
LVI.	Bhánagar - Gondal - Junágarh-Porbandar. - - - - -	195,222	9,10,930	—	—	3,914	2,655	2,162	6,278	759	112
LVII.	Jetalsar-Rajkot - - - -	Details not furnished.		—	—	—	—	—	—	—	—
	Total - - - - -	271,386	13,34,732	15	214	36,184	17,994	2,335	7,513	771	140
	FOREIGN LINE.										
LX.	West of India Portuguese - - -	115,637	3,61,156	23	196	39	12	19	5	—	—
	Total - - - - -	115,637	3,61,156	23	196	39	12	19	5	—	—
	Total Metre gauge - - -	5,547,472	3,27,04,609	9,274	1,61,445	479,914	4,15,725	225,146	3,96,987	4,763	11,484

(a) Including the Guntakal-Mysore Frontier, the Southern Mahratta (Mysore section), the Kolhapur, the Yesvantpur-Mysore Frontier, and the Mysore-Bangalore Railways.

(b) Including the Pondicherry Railway

No. 27—concluded.

GAUGE RAILWAYS during the Year ending the 31st December 1893—concluded.

Coal and Coke for Revenue only.		Revenue Stores other than Coal and Coke.		Live Stock.		Rents, Miscellaneous, &c. Less Out-standings Irrecoverable.	Total.		Railway.	Serial Number.
Tons.	Earnings.	Tons.	Earnings.	Tons.	Earnings.		Tons.	Earnings.*		
	Rs.		Rs.		Rs.	Rs.		Rs.	<i>Metre Gauge.</i>	
									STATE LINES WORKED BY COMPANIES.	
27,745	32,014	22,009	27,408	121	2,186	8,678	683,809	25,86,872	Bengal and North-Western { Tirhoot Section.	XXXIII.
85,484	3,07,192	57,098	1,14,148	6,203	56,849	18,607	1,835,100	1,55,92,268	Company's Section.	
—	—	32	6	—	—	5	2,054	2,515	Rajputana-Malwa - - -	XXXV.
31,719	93,132	109,696	1,74,048	171	6,135	13,660	923,351	45,76,781	Pálanpur-Deesa - - -	XXXVI.
26,217	32,174	473,210	92,395	138	2,520	12,612	1,492,800	37,76,548	Southern Mahratta (a) - -	XXXVII.
									South Indian (b) - - -	XL.
171,165	4,64,512	662,045	4,01,095	6,638	67,190	53,568	4,948,264	2,65,34,934	Total.	
									STATE LINES WORKED BY THE STATE.	
44,919	17,447	22,182	26,759	43	972	7,901	523,605	25,70,474	Eastern Bengal (State)—Northern and Behar Sections (including the Kaunia-Dharila 2' 6" gauge Branch). Dacca Section.	XLIII.
88	70	3,613	1,553	2	42	1,136	46,600	1,11,147	Burma (State) - - -	XLIV.
25,117	23,309	189,772	93,698	2,297	45,455	10,985	833,524	28,35,103	Total.	
70,124	40,826	215,567	1,32,005	2,342	46,469	20,022	1,408,729	55,16,724		
									ASSISTED COMPANIES.	
—	—	—	—	—	—	131	9,359	3,023	Deoghur - - -	XLVI.
1,848	3,445	32,038	13,073	5	67	2,521	283,844	4,88,684	Rohilkund and Kumaon (Company's Section) (d).	XLVII.
—	—	2,166	608	—	—	210	29,638	98,263	Bengal Doocars - - -	XLVIII.
—	—	13,512	2,975	53	540	502	205,193	3,89,772	Dibru-Sadiya - - -	XLIX.
1,848	3,445	47,716	16,656	58	607	3,364	528,029	9,79,742	Total	
									LINE OWNED BY NATIVE STATE AND WORKED BY COMPANY.	
—	—	22	6	322	814	140	133,042	1,84,607	The Gaekwar's Melsána - -	LI.
—	—	22	6	322	814	140	133,042	1,84,607	Total.	
									LINE OWNED AND WORKED BY NATIVE STATES.	
3,891	6,877	3,212	3,623	46	519	1,425	105,345	4,25,939	Jodhpore-Bickaneer—Jodhpore Section.	
18	15	41	16	2	24	388	10,509	27,566	Bickaneer section.	
8,417	14,792	19,610	21,074	66	1,087	890	230,140	8,87,518	Bhávsnagar - Gondal - Junágarh - Porbandar.	LVI.
—	—	—	—	—	—	—	—	19,952	Jetalsar-Rájkot - - -	LVII.
12,326	21,684	22,863	24,713	114	1,630	2,703	345,994	14,31,275	Total.	
									FOREIGN LINE.	
540	284	4,445	1,917	—	—	266	120,703	3,63,836	West of India Portuguese - -	LIX
540	284	4,445	1,917	—	—	266	120,703	3,63,836	Total.	
256,003	5,30,751	952,658	5,73,392	9,469	1,16,710	80,063	7,484,701	3,50,11,118	Total Metre Gauge.	

(c) Carried free.

(d) Including the Rohilkund and Kumaon (Lucknow-Bareilly section).

* See also Statements Nos. 19 and 29.

STATEMENT

UNIT MILEAGES of PASSENGERS and GOODS carried on the STANDARD and

Serial Number.	Railway.	PASSENGER TRAFFIC.						Other Coaching Traffic. Ton-miles.	General Merchandise.
		Number of Passenger-Miles (expressed in the Number of Passengers carried one mile).							
		First Class.	Second Class.	Third or Intermediate Class.	Lowest Class (Third or Fourth).	Total.*			
	<i>Standard Gauge.</i>								
	STATE LINES WORKED BY COMPANIES.								
I.	East Indian - -	7,068,388	22,009,437	48,715,661	972,169,064	1,049,962,500	11,463,777	720,985,588	
II.	Bengal-Nágpur - -	321,106	983,938	1,161,244	105,081,935	107,548,223	1,006,572	85,235,027	
III.	Indian Midland (a) -	1,571,772	4,457,774	32,161,485	81,194,807	119,385,838	1,596,961	66,286,122	
V.	Godhra-Rutlam - -	4,934	23,482	—	2,061,091	2,089,507	9,643	569,936	
	Total - - -	8,966,150	27,474,631	82,038,390	1,160,506,897	1,278,986,068	14,076,953	873,076,673	
	STATE LINES WORKED BY THE STATE.								
IX.	North-Western (State) (b) -	5,332,351	19,715,197	33,647,780	552,889,943	611,585,221	7,056,369	521,032,577	
X.	Hyderabad-Umarkot -	12,022	38,944	403,840	4,736,378	5,191,184	7,919	1,069,244	
XI.	Oudh and Rohilkhand (State)	1,885,358	6,064,484	5,526,519	239,979,847	253,456,208	1,608,348	109,360,551	
XII.	Eastern Bengal (State) -	1,369,123	3,197,314	21,096,034	124,558,643	150,221,114	931,020	74,858,147	
XIII.	Bengal Central - -	80,985	629,621	4,243,049	29,157,324	34,110,979	150,311	6,149,137	
XIV.	Calcutta Port Commis- sioners'.	There is no passenger traffic on this line.					—	—	Mileage not
XV.	East Coast (State) - -	58,781	303,367	—	21,842,098	22,204,246	38,542	782,569	
	Total - - -	8,738,620	29,948,927	64,917,172	973,164,233	1,076,768,952	9,792,509	713,252,225	
	LINES WORKED BY GUARANTEED COMPANIES.								
XVIII.	Great Indian Peninsula (c)	7,311,134	28,967,183	66,740,048	451,967,293	554,985,658	6,978,995	600,534,649	
XIX.	Bombay, Baroda, and Central India.	2,701,521	14,144,278	49,831,356	253,030,277	319,707,432	3,722,858	218,832,667	
XX.	Madras - - -	3,252,810	8,153,709	—	360,164,026	371,570,545	2,876,266	128,550,811	
	Total - - -	13,265,465	51,265,170	116,571,404	1,065,161,596	1,246,263,635	13,578,119	947,918,127	
	ASSISTED COMPANIES.								
XXI.	Delhi-Umballa-Kalka -	492,199	1,146,463	1,364,937	33,166,782	36,170,381	558,780	7,263,127	
XXII.	Tarkessur - - -	8,049	59,842	1,532,939	14,926,340	16,527,170	28,208	324,335	
	Total - - -	500,248	1,206,305	2,897,876	48,093,122	52,697,551	586,988	7,587,462	
	LINES OWNED BY NATIVE STATES AND WORKED BY COMPANIES.								
XXVI.	The Nizam's Guaranteed State (d).	640,974	2,726,583	13,204,485	59,366,996	75,939,038	435,954	22,479,582	
XXVII.	The Gackwar's Petlád -	3,427	28,956	—	3,294,189	3,326,572	7,607	274,491	
	Total - - -	644,401	2,755,539	13,204,485	62,661,185	79,265,610	443,561	22,754,073	
	LINE OWNED BY NATIVE STATE AND WORKED BY STATE RAILWAY AGENCY.								
XXIX.	Rájpura-Bhátinda - -	54,489	143,198	767,808	22,546,559	23,512,054	66,768	7,890,466	
	Total - - -	54,489	143,198	767,808	22,546,559	23,512,054	66,768	7,890,466	
	Total Standard gauge -	32,169,373	112,793,770	280,397,135	3,332,133,592	3,757,493,870	38,544,898	2,572,479,026	

(a) Including the Bhopal-Itarsi Railway.

(b) Including the Jammu and Kashmir Railway (Native State section).

No. 28.

METRE GAUGE RAILWAYS during the Year ending the 31st December 1893.

GOODS TRAFFIC.

Number of Ton-Miles (expressed in the Number of Tons moved one mile).

								Railway.
Military Stores.	Railway Materials for Construction (Home Line only).	Coal and Coke for the Public and Foreign Railways.	Coal and Coke for Construction (Home Line only).	Coal and Coke for Revenue only.	Revenue Stores other than Coal and Coke.	Live Stock.	Total.*	
								<i>Standard Gauge.</i>
								STATE LINES WORKED BY COMPANIES.
3,643,255	10,346,911	359,327,080	395,589	65,493,251	29,039,725	1,260,506	1,190,491,905	East Indian.
77,558	7,616,825	15,823,930	1,536,533	9,099,436	3,291,897	11,861	122,693,067	Bengal-Nágpur.
130,441	1,623,840	396,329	15,160	7,171,203	2,551,559	47,041	78,221,695	Indian Midland (a).
—	314,945	50	6,703	3,559	—	472	895,665	Godhra-Rutlam.
3,851,254	19,902,521	375,547,389	1,953,985	81,767,449	34,883,181	1,319,880	1,392,302,332	Total.
								STATE LINES WORKED BY THE STATE.
9,145,680	26,506,459	4,146,767	2,279,470	29,005,809	81,991,643	531,187	674,639,592	North-Western (State) (b).
718	150,903	—	—	63	35,623	—	1,256,551	Hyderabad-Umarkot.
416,992	25,845,597	4,257,443	—	10,920,708	6,888,289	58,335	157,746,915	Oudh and Rohilkhand (State)
16,841	1,412,061	4,357,083	1,773	3,012,705	1,702,462	2,877	85,363,949	Eastern Bengal (State).
780	2,101	1,001,256	—	125,182	47,814	146	7,326,416	Bengal Central
recorded.	—	—	—	—	—	—	—	Calcutta Port Commissioners.
8	3,655,296	127	48,067	117,877	41,495	53	4,645,492	East Coast (State).
9,580,019	57,572,417	13,762,676	2,329,310	43,182,344	90,707,326	592,598	930,978,915	Total.
								LINE WORKED BY GUARANTEED COMPANIES.
1,630,727	1,907,132	9,829,883	5,628	33,692,564	52,500,695	1,300,384	701,401,662	Great Indian Peninsula (c).
162,248	1,179,131	12,373,188	42,912	6,277,272	5,279,191	3,165,957	247,312,566	Bombay, Baroda, and Central India.
434,099	762,771	12,362,998	—	952,664	4,556,678	184,831	147,304,852	Madras.
2,227,074	3,849,034	34,566,069	48,540	40,922,500	62,336,564	4,651,172	1,096,519,080	Total.
								ASSISTED COMPANIES.
156,572	29,850	478,684	—	—	—	9,925	7,938,158	Delhi-Umballa-Kalka.
—	4,715	38,962	—	24	15,760	—	383,796	Tarkessur.
156,572	34,565	517,646	—	24	15,760	9,925	8,321,954	Total.
								LINE OWNED BY NATIVE STATES AND WORKED BY COMPANIES.
92,004	317,242	23,102,573	13,333	2,416,945	2,365,819	38,120	50,825,618	The Nizam's Guaranteed State (d).
—	—	—	—	2,462	—	1,968	278,921	The Gaekwar's Petlād.
92,004	317,242	23,102,573	13,333	2,419,407	2,365,819	40,088	51,104,539	Total.
								LINE OWNED BY NATIVE STATE AND WORKED BY STATE RAILWAY AGENCY.
190,692	41,086	52,624	—	91,563	610,924	2,054	8,879,409	Rájpura-Bhátinda.
190,692	41,086	52,624	—	91,563	610,924	2,054	8,879,409	Total.
16,097,615	81,716,865	447,548,977	4,345,168	168,383,287	190,919,574	6,615,717	3,488,106,229	Total Standard gauge.

(c) Including the Wardha Coal, Dhond-Manmád, Khámgaon, and Amráoti Railways.
* See also Statements Nos. 18 and 19.

(d) Including the Bezvada extension and the Bezvada-Godávari section of the East Coast (State) Railway.

UNIT MILEAGES OF PASSENGERS and GOODS carried on the STANDARD and

Serial Number.	Railway.	PASSENGER TRAFFIC.						Other Coaching Traffic. Ton-miles.	General Merchandise.
		Number of Passenger-Miles (expressed in the Number of Passengers carried one mile).							
		First Class.	Second Class.	Third or Intermediate Class.	Lowest Class (Third or Fourth).	Total.*			
XXXIII.	<i>Metre Gauge.</i> STATE LINES WORKED BY COMPANIES. Bengal and North- Western :— Tirhoot Section } Company's Section }	419,037	755,892	1,321,202	175,411,725	177,907,946	622,342	80,889,187	
XXXV.	Rajputana-Malwa - -	1,751,312	6,219,324	18,943,393	518,585,209	545,499,238	3,739,351	407,387,549	
XXXVI.	Pálanpur-Deesa - -	1,368	4,921	—	119,304	125,593	709	16,922	
XXXVII.	Southern Mahratta (a) -	1,461,207	4,398,044	—	234,693,190	240,492,441	1,259,056	87,402,489	
XL.	South Indian (b) - -	1,087,538	7,786,041	—	357,057,498	365,931,077	817,918	82,453,904	
	Total - - -	4,720,462	19,104,222	20,264,685	1,285,866,926	1,329,956,295	6,489,376	658,150,051	
XLIII.	STATE LINES WORKED BY THE STATE. Eastern Bengal (State) :— Northern and Behar Sections (including the Kaunia-Dharila, 2' 6" gauge, Branch). Dacca Section - -	729,781	1,904,219	7,744,256	87,991,055	98,459,311	690,617	44,135,081	
XLIV.	Burma (State) - -	1,216,437	6,285,493	—	211,272,648	218,774,518	1,182,961	62,240,618	
	Total - - -	2,010,893	8,519,205	9,367,942	318,244,333	338,142,373	1,959,319	108,449,734	
XLVI.	ASSISTED COMPANIES. Deoghur - - -	4,498	—	1,264,665	—	1,269,163	—	48,555	
XLVII.	Rohilkund and Kumaon (Company's Section) (c).	210,312	852,368	334,564	33,090,490	34,487,734	167,523	12,401,262	
XLVIII.	Bengal Doars - -	2,186	3,727	—	172,093	178,006	2,465	231,614	
XLIX.	Dibru-Sadiya - - -	76,604	59,784	—	3,229,271	3,365,659	8,717	1,075,377	
	Total - - -	293,600	915,879	1,599,229	36,491,854	39,300,562	178,705	13,751,808	
LI.	LINE OWNED BY NATIVE STATE AND WORKED BY COMPANY. The Guckwar's Mohsána -	10,162	75,295	—	11,811,305	11,896,762	32,998	4,297,301	
	Total - - -	10,162	75,295	—	11,811,305	11,896,762	32,998	4,297,301	
LIV.	LINES OWNED AND WORKED BY NATIVE STATES. Jodhpore-Bickaneer :— Jodhpore Section - -	71,787	314,231	—	31,464,298	31,850,316	205,777	6,758,007	
	Bickaneer Section - -	5,314	19,535	—	2,549,910	2,568,759	19,323	399,628	
LV.	Bhánagar-Gondal-Junágarh- Porbándur.	319,793	1,549,810	—	62,616,636	64,486,239	258,378	13,406,846	
LVI.	Jetalpur-Rájkot - -	Information not furnished.					—	—	
	Total - - -	396,894	1,883,576	—	96,624,844	98,905,314	483,478	20,564,481	
LX.	FOREIGN LINE. West of India Portuguese -	32,032	127,712	—	3,791,770	3,951,514	19,929	5,474,081	
	Total - - -	32,032	127,712	—	3,791,770	3,951,514	19,929	5,474,081	
	Total Metre gauge - -	7,464,043	30,625,889	31,231,856	1,762,331,032	1,822,152,820	9,113,805	610,687,456	

(a) Including the Guntakal-Mysore Frontier, the Southern Mahratta (Mysore Section), the Kolhapur, the Yesvantpur-Mysore Frontier, and the Mysore-Nanjangúd Railways.

No. 28—concluded.

METRE GAUGE RAILWAYS during the Year ending the 31st December 1893—concluded.

GOODS TRAFFIC.								Railways.
Number of Ton-Miles (expressed in the Number of Tons moved one mile).								
Military Stores.	Railway Materials for Construction (Home Line only).	Coal and Coke for the Public and Foreign Railways.	Coal and Coke for Construction (Home Line only).	Coal and Coke for Revenue only.	Revenue Stores other than Coal and Coke.	Live Stock.	Total.*	
—	1,092,682	1,726,271	—	2,476,992	2,135,463	67,731	88,388,326	<i>Metre Gauge.</i>
831,677	11,155,573	1,507,774	599,592	16,851,689	6,382,416	574,015	445,290,285	STATE LINES WORKED BY COMPANIES.
440	14,901	—	—	—	298	—	32,561	Bengal and North-Western :—
145,229	4,076,749	3,582,240	—	6,295,706	12,990,306	31,537	114,524,256	Tirhoot Section.
32,541	2,271,317	309,492	—	2,522,627	6,870,549	17,223	94,477,653	Company's Section.
1,009,887	18,611,222	7,125,777	599,592	28,147,014	28,379,032	690,506	742,713,081	Rajputana-Malwa.
								Pálanpur-Deesa.
								Southern Mahratta (a).
								South Indian (b).
								Total.
3,224	2,832,744	1,210,867	2,674	1,367,220	2,097,070	5,803	51,654,683	STATE LINES WORKED BY THE STATE.
36	2,665	48,313	328	5,481	121,690	117	2,252,665	Eastern Bengal (State) :—
593,903	1,406,136	4,317	10,140	1,553,008	8,702,820	237,251	74,748,193	Northern and Behar Sections, (including the Kaunia-Dharila 2' 6" gauge Branch).
597,163	4,241,545	1,263,497	13,142	2,925,709	10,921,580	243,171	128,655,541	Dacca Section.
								Burma (State).
								Total.
—	—	—	—	1,274	—	—	44,829	ASSISTED COMPANIES.
45,912	933,247	6,278	1,429	240,378	968,855	1,383	14,598,744	Deoghur.
—	—	15,538	—	—	396,539	—	643,691	Rohilkund and Kumaon (Company's Section) (c).
—	—	9,589,068	—	—	567,114	2,711	11,234,270	Bengal Dooars.
45,912	933,247	9,610,884	1,429	241,652	1,932,508	4,094	26,521,534	Dibru-Sadiya.
								Total.
125	864	443	—	—	343	8,257	4,307,333	LINE OWNED BY NATIVE STATE AND WORKED BY COMPANY.
125	864	443	—	—	343	8,257	4,307,333	The Gaekwar's Mehsána.
								Total.
986	989,605	20,558	1,575	383,296	192,218	2,936	8,349,181	LINES OWNED AND WORKED BY NATIVE STATES.
198	7,115	2,949	—	795	943	92	411,720	Jodhpore-Bickaneer :—
—	359,877	188,123	4,131	677,049	1,914,977	7,561	16,558,564	Jodhpore Section.
—	—	—	—	—	—	—	—	Bickaneer Section.
								Bhánagar-Gondal-Junágarh Porbandár.
								Jetalsar-Rájkot.
1,184	1,356,597	211,630	5,706	1,061,140	2,108,138	10,589	25,319,465	Total.
1,165	432	37	—	11,453	55,922	—	5,543,090	FOREIGN LINE.
1,165	432	37	—	11,453	55,922	—	5,543,090	West of India Portuguese.
1,655,436	25,143,907	18,212,268	619,869	32,386,968	43,397,523	956,617	933,060,044	Total.
								Total Metre gauge.

(b) Including the Pondicherry Railway.

(c) Including the Rohilkund and Kumaon Railway (Lucknow-Bareilly Section).

* See also Statement No. 18 and 19.

GROSS EARNINGS, WORKING EXPENSES, and NET EARNINGS per TRAIN-MILE, also the GROSS EARNINGS per MILE

Serial Number.	Railway.	Coaching Earnings.*			Goods Earnings.†			Total Traffic Earnings.		Sundries, including Electric Telegraph.	
		Amount.	Per Passenger Train-Mile.	Per Cent. on Total Traffic Earnings.	Amount.	Per Goods Train-Mile.	Per Cent. on Total Traffic Earnings.	Amount.	Per Train-Mile.	Amount.	Per Train-Mile.
	<i>Standard Gauge.</i>	Rs.	Rs.		Rs.	Rs.		Rs.	Rs.	Rs.	Rs.
	STATE LINES WORKED BY COMPANIES.										
I.	East Indian - - -	1,66,19,163	4·15	33·83	3,25,11,703	5·70	66·17	4,91,30,866	5·06	5,62,500	0·06
II.	Bengal-Nágpur - - -	13,34,341	3·23	22·45	46,08,305	4·14	75·55	59,42,646	3·90	4,75,105	0·31
III.	Indian Midland (b) - - -	20,69,217	3·04	42·91	27,53,420	3·55	57·09	48,22,637	3·31	2,29,813	0·16
V.	Godhra-Rutlam - - -	28,624	3·44	46·23	33,287	3·32	53·77	61,911	3·37	669	0·04
VI.	Wardha Coal - - -	—	—	—	—	—	—	—	—	(c) 90,698	—
VII.	Dhond-Maumád - - -	—	—	—	—	—	—	—	—	(c) 3,61,424	—
VIII.	Bezwada Extension (including the Bezwada-Godávari section of the East Coast Railway).	—	—	—	—	—	—	—	—	(c) 1,42,220	—
	Total - - -	2,00,51,345	3·92	33·44	3,99,06,715	5·25	66·56	5,99,58,060	4·72	18,62,429	0·10
	STATE LINES WORKED BY THE STATE.										
IX.	North-Western (State) (e) -	95,52,843	2·93	33·32	1,91,19,245	3·49	66·68	2,86,72,088	3·27	5,35,584	0·06
X.	Hyderabad-Umarkot - - -	71,850	2·23	55·39	57,875	2·16	44·61	1,29,725	2·20	1,092	0·02
XI.	Oudh and Rohilkhand (State) -	39,08,783	3·31	46·74	44,53,397	3·08	53·26	83,62,180	3·18	3,53,747	0·13
XII.	Eastern Bengal (State) - - -	24,05,548	2·73	36·37	42,08,750	5·67	63·63	66,14,298	4·08	2,39,330	0·15
XIII.	Bengal Central - - -	5,61,256	2·86	72·43	2,13,664	2·14	27·57	7,74,920	2·62	8,609	0·03
XIV.	Calcutta Port Commissioners' -	—	—	—	2,82,207	(f)	100·00	2,82,207	(f)	21,180	(f)
XV.	East Coast (State) - - -	1,96,261	5·46	69·06	87,910	0·62	30·94	2,84,171	1·63	5,022	0·03
	Total - - -	1,66,96,541	2·98	37·01	2,84,23,048	3·54	62·09	4,51,19,589	3·31	11,64,564	0·09
	LINES WORKED BY GUARANTEED COMPANIES.										
XVIII.	Great Indian Peninsula (g) -	92,35,087	2·48	24·03	2,92,03,680	4·73	75·97	3,84,38,767	3·88	3,74,974	0·04
XIX.	Bombay, Baroda, and Central India. - - -	49,55,714	3·96	33·38	98,91,624	8·40	66·62	1,48,47,338	6·11	2,48,707	0·10
XX.	Madras - - -	39,84,581	3·11	38·73	63,03,468	4·63	61·27	1,02,88,049	3·89	2,16,987	0·08
	Total - - -	1,81,75,382	2·91	28·59	4,53,98,772	5·21	71·41	6,35,74,154	4·25	8,40,668	0·05
	ASSISTED COMPANIES.										
XXI.	Delhi-Umballa-Kalka - - -	7,46,140	2·35	62·91	4,39,979	2·73	37·09	11,86,419	2·48	12,389	0·02
XXII.	Tarkessur - - -	2,63,152	5·65	93·35	18,757	4·03	6·65	2,81,909	5·50	1,142	0·02
	Total - - -	10,09,292	2·78	68·75	4,58,736	2·76	31·25	14,68,028	2·77	13,531	0·03
	LINES OWNED BY NATIVE STATES AND WORKED BY COMPANIES.										
XXIII.	Khámgaon - - -	—	—	—	—	—	—	—	—	(c) 21,697	—
XXIV.	Amráoti - - -	—	—	—	—	—	—	—	—	(c) 43,941	—
XXVI.	The Nizam's Guaranteed State (h) -	10,08,982	3·71	34·33	19,29,927	4·75	65·67	29,38,909	4·33	1,22,696	0·18
XXVII.	The Gaekwar's Petlád - - -	45,345	3·19	72·11	17,539	3·34	27·89	62,884	3·23	1,069	0·06
	Total - - -	10,54,327	3·68	35·12	19,47,466	4·73	64·88	30,01,793	4·30	1,89,403	0·18
	LINES OWNED BY NATIVE STATES AND WORKED BY STATE RAILWAY AGENCY.										
XXIX.	Rájpura-Bhátinda - - -	3,30,935	3·87	48·66	3,49,138	3·41	51·34	6,80,073	3·62	4,274	0·02
XXX.	Jammu and Kashmir (Native State section.) - - -	—	—	—	—	—	—	—	—	(c) 14,332	—
	Total - - -	3,30,935	3·87	48·66	3,49,138	3·41	51·34	6,80,073	3·62	18,606	0·02
	Total Standard gauge - - -	5,78,17,822	3·24	32·98	11,64,83,875	4·66	67·02	17,38,01,697	4·07	40,89,201	0·08

(a) Excluding Rs. 10,49,127 on account of a write-back to capital in connection with the increase made in in the number of sleepers laid on the line.

(b) Including the Bhopal-Itánsi Railway.

(c) Represent amounts received by the State as rent from the working railway

(d) Expenditure incurred direct by the State.

(e) Includes the Jammu and Kashmir Railway (Native State Section).

(f) Train-mileage not recorded.

No. 29.

per WEEK on the STANDARD and METRE GAUGE RAILWAYS during the Year ending the 31st December 1892.

Total Earnings, excluding Steamboat.			Steamboat Earnings.	Gross Earnings, including Steamboat.†			Working Expenses, including Steamboat Expenses, Rent of Leased Lines, and Con- tribution to Provident Fund.§			Net Earnings.‡		
Amount.	Per Mean Mile worked per Week‡	Per Train- Mile.	Amount.	Amount.	Per Train- Mile.	Per Cent. on Total Stand- ard Gauge.	Amount.	Per Train- Mile.	Per Cent. on Gross Earn- ings.	Amount.	Per Train- Mile.	Per cent. on Total Capital Outlay on Open Line (Statement No. 16 pages 92 and 93).
Rs.	Rs.	Rs.	Rs.	Rs.	Rs.		Rs.	Rs.		Rs.	Rs.	
4,96,93,366	584.50	5.12	1,02,161	4,97,95,527	5.13	28.04	1,36,63,629	1.41	27.44	3,61,31,898	3.72	9.82
64,17,751	143.55	4.21	—	64,17,751	4.21	3.61	31,55,531	2.07	49.17	32,62,220	2.14	3.33
50,52,450	128.90	3.47	—	50,52,450	3.47	2.84	31,69,078	2.18	62.72	18,83,372	1.29	2.00
62,580	50.21	3.41	—	62,580	3.41	0.04	26,040	1.42	41.61	36,540	1.99	2.41
(c) 90,698	—	—	—	(c) 90,698	—	—	(d) 1,485	—	—	89,213	—	—
(c) 3,61,424	—	—	—	(c) 3,61,424	—	—	(d) 12,822	—	—	3,48,572	—	—
(c) 1,42,220	—	—	—	(c) 1,42,220	—	—	—	—	—	1,42,220	—	—
6,18,20,489	359.80	4.82	1,02,161	6,19,22,650	4.83	34.53	2,00,28,615	1.58	32.63	4,18,94,035	3.25	7.36
2,92,07,672	229.33	3.33	61,060	2,92,68,732	3.34	16.48	1,94,71,089	2.22	66.53	97,97,643	1.12	2.32
1,30,817	42.70	2.22	—	1,30,817	2.22	0.07	1,14,345	1.94	87.41	16,472	0.28	0.99
87,15,927	238.62	3.31	—	87,15,927	3.31	4.91	36,98,874	1.41	42.44	50,17,053	1.90	5.28
68,53,628	529.49	4.23	2,15,857	70,69,485	4.36	3.98	30,92,012	1.91	43.74	39,77,473	2.45	6.70
7,83,529	120.53	2.64	—	7,83,529	2.64	0.44	4,68,537	1.58	59.80	3,14,992	1.06	3.12
3,03,387	938.01	(f)	—	3,03,387	(f)	0.17	1,86,860	(f)	61.59	1,16,527	(f)	1.98
2,89,198	68.41	1.66	7,930	2,97,123	1.70	0.17	2,51,639	1.44	84.69	45,484	0.26	0.15
4,62,84,153	242.39	3.40	2,84,847	4,65,69,000	3.42	26.22	2,72,83,356	2.00	58.59	1,92,85,644	1.42	3.13
3,88,13,741	500.92	3.92	—	3,88,13,741	3.92	21.85	2,07,94,447	2.10	53.57	1,80,19,294	1.82	6.50
1,50,96,045	629.87	6.21	—	1,50,96,045	6.21	8.50	55,18,002	2.27	56.55	95,78,043	3.94	9.87
1,05,05,036	240.72	3.97	—	1,05,05,036	3.97	5.92	50,83,294	1.92	48.39	54,21,742	2.05	4.51
6,44,14,822	443.96	4.30	—	6,44,14,822	4.30	36.27	3,13,95,743	2.10	48.74	3,30,19,079	2.20	6.67
11,98,508	142.80	2.50	—	11,98,508	2.50	0.67	5,75,284	1.20	48.00	6,23,224	1.30	4.17
2,83,051	244.86	5.53	—	2,83,051	5.53	0.16	1,32,631	2.59	46.86	1,50,420	2.94	8.61
14,81,559	155.16	2.80	—	14,81,559	2.80	0.83	7,07,915	1.84	47.78	7,73,644	1.46	4.48
(c) 21,697	—	—	—	(c) 21,697	—	—	—	—	—	21,697	—	—
(c) 43,941	—	—	—	(c) 43,941	—	—	(d) 885	—	—	43,056	—	—
30,61,605	185.94	4.51	—	30,61,605	4.51	1.72	16,25,154	2.40	53.08	14,36,451	2.11	3.57
63,953	92.12	3.29	—	63,953	3.29	0.04	23,326	1.20	36.47	40,627	2.09	5.70
31,91,196	134.59	4.48	—	31,91,196	4.48	1.76	16,49,365	2.36	52.74	15,41,831	2.12	3.29
6,84,347	121.92	3.64	—	6,84,347	3.64	0.39	3,76,391	2.00	55.00	3,07,956	1.64	4.58
(c) 14,332	—	—	—	(c) 14,332	—	—	—	—	—	14,332	—	—
6,98,679	121.92	3.64	—	6,98,679	3.64	0.39	3,76,391	2.00	55.00	3,22,288	1.64	4.58
17,78,90,898	325.41	4.15	3,87,008	17,82,77,906	4.17	100.00	8,14,41,885	1.91	45.68	9,68,36,521	2.26	5.48

(g) Including branch lines worked, but excluding charges incurred direct by the State. The percentage of net earnings on capital outlay is for the Great Indian Peninsula Railway only.

(h) Including the earnings and expenses of the Bezvada extension, but excluding the charges incurred direct by the State. The percentage of net earnings on capital outlay is for the Nizam's Guaranteed State Railway only.

* See also Statements Nos. 19 and 20.

† See also Statement No. 19.

‡ See also Statements Nos. 19 and 27.

§ See also Statements Nos. 19 and 30.

STATEMENT

GROSS EARNINGS, WORKING EXPENSES, and NET EARNINGS per TRAIN-MILE, also the GROSS EARNINGS per MILE per

Serial Number.	Railway.	Coaching Earnings.*			Goods Earnings.†			Total Traffic Earnings.		Sundries, including Electric Telegraph.	
		Amount.	Per Passenger Train-Mile.	Per Cent. on Total Traffic Earnings.	Amount.	Per Goods Train-Mile.	Per Cent. on Total Traffic Earnings.	Amount.	Per Train-Mile.	Amount.	Per Train-Mile.
	<i>Metre Gauge.</i>	Rs.	Rs.		Rs.	Rs.		Rs.	Rs.	Rs.	Rs.
	STATE LINES WORKED BY COMPANIES.										
XXXIII.	Bengal and North-Western :—										
	Tirhoot section - - -	20,83,487	2·90	44·61	25,86,872	2·83	55·39	46,70,359	2·86	1,83,921	0·11
	Company's section - - -	66,35,953	3·11	29·85	1,55,92,268	3·52	70·15	2,22,28,221	3·39	3,42,464	0·05
XXXV.	Rajputana-Malwa - - -	1,908	2·50	43·14	2,515	2·29	56·86	4,423	2·38	13	—
XXXVI.	Pálanpur-Deesa - - -	31,83,087	2·77	40·64	45,76,731	2·41	59·36	77,09,818	2·55	1,10,220	0·04
XXXVII.	Southern Mahratta (a) - -	41,63,708	2·93	52·44	37,76,548	2·12	47·56	79,40,256	2·48	1,70,173	0·05
	South Indian (b) - - -										
	Total - - -	1,60,18,143	2·96	37·64	2,65,34,934	2·94	62·36	4,25,53,077	2·95	8,06,791	0·06
	STATE LINES WORKED BY THE STATE.										
XLIII.	Eastern Bengal (State) :—										
	Northern and Behar sections, (including the Kaunia-Dharla 2' 6" gauge branch).	15,73,136	2·88	37·97	25,70,474	3·39	62·03	41,43,610	3·18	62,802	0·05
	Dacca section - - -	3,06,526	3·51	73·39	1,11,147	1·25	26·61	4,17,673	2·36	10,317	0·06
XLIV.	Burma (State) - - -	37,31,619	4·03	56·83	28,35,103	2·79	43·17	65,66,722	3·38	1,81,413	0·07
	Total - - -	56,11,281	3·60	50·42	55,16,724	2·96	49·58	1,11,28,005	3·25	2,04,532	0·06
	ASSISTED COMPANIES.										
XLVI.	Deoghur - - -	34,786	—	92·00	3,023	—	8·00	37,809	2·53	—	—
XLVII.	Rohilkund and Kumaon (Company's section) (d).	5,34,481	2·50	52·24	4,88,684	2·05	47·76	10,23,165	2·27	1,81,621	0·29
XLVIII.	Bengal Dooars - - -	4,012	2·58	3·92	98,263	3·91	96·08	1,02,275	3·83	1,162	0·04
XLIX.	Dibru-Sadiya - - -	92,206	2·44	19·13	3,89,772	2·34	80·87	4,81,978	2·35	30,120	0·15
	Total - - -	6,65,485	2·49	40·45	9,79,742	2·27	59·55	16,45,227	2·36	1,62,903	0·23
	LINE OWNED BY NATIVE STATE AND WORKED BY COMPANY.										
LI.	The Gackwar's Mehsána - -	1,50,621	3·18	44·93	1,84,608	3·41	55·07	3,35,229	3·31	1,630	0·02
	Total - - -	1,50,621	3·18	44·93	1,84,608	3·41	55·07	3,35,229	3·31	1,630	0·02
	LINES OWNED AND WORKED BY NATIVE STATES.										
LV.	Jodhpore-Bickaneer:—										
	Jodhpore section - - -	3,85,496	2·76	47·51	4,25,939	2·87	52·49	8,11,435	2·81	20,330	0·07
	Bickaneer section - - -	31,366	1·57	53·22	27,566	2·28	46·78	58,932	1·83	7,793	0·24
LVI.	Bhávnagar - Gondal - Junágarh-Porbandar.	10,18,599	3·51	51·54	9,57,818	3·37	48·46	19,76,417	3·44	53,512	0·09
LVII.	Jetalsar-Rájkot - - -	31,440	(e)	80·32	19,952	(e)	19·68	1,01,392	3·85	1,614	0·06
	Total - - -	15,16,901	3·19	51·45	14,31,275	3·17	48·55	29,48,176	3·20	83,249	0·09
	FOREIGN LINE.										
LX.	West of India Portuguese -	61,979	1·33	14·56	3,63,836	4·25	85·44	4,25,815	3·22	17,503	0·13
	Total - - -	61,979	1·33	14·56	3,63,836	4·25	85·44	4,25,815	3·22	17,503	0·13
	Total metre gauge - - -	2,40,24,410	3·08	40·69	3,50,11,119	2·94	59·31	5,90,35,529	3·00	12,76,608	0·06

(a) Including the Guntakal-Mysore Frontier, the Southern Mahratta Railway (Mysore section) the Kolhápúr, the Yesvantpur-Mysore Frontier, and the Mysore Nanjangúd Railways.

(b) Including the Pondicherry Railway.

(c) Including Rs. 18,014 on account of the Pondicherry Railway.

(d) Including the Rohilkund and Kumaon (Lucknow-Bareilly section),

No. 29—concluded.

WEEK on the STANDARD and METRE GAUGE RAILWAYS during the Year ending the 31st December 1893—concluded.

Total Earnings excluding Steamboat.			Steamboat Earnings.	Gross Earnings, including Steamboat.†			Working Expenses, including Steamboat Expenses, Rent of Leased Lines, and Con- tribution to Provident Fund.‡			Net Earnings.§		
Amount.	Per Mean- Mile worked per Week.‡	Per Train- Mile.	Amount.	Amount.	Per Train- Mile.	Per Cent. on Total Metre Gauge.	Amount.	Per Train- Mile.	Per Cent. on Gross Earn- ings.	Amount.	Per Train- Mile.	Per cent. on Total Capital Outlay on Open Line (Statement No. 16, pages 92 and 93).
Rs.	Rs.	Rs.	Rs.	Rs.	Rs.		Rs.	Rs.		Rs.	Rs.	
48,54,280	123·43	2·98	4,41,095	52,95,375	3·24	8·64	22,87,448	1·40	43·20	30,07,927	1·84	5·65
2,25,70,685	259·29	3·44	—	2,25,70,685	3·44	36·83	92,81,585	1·41	41·12	1,32,89,100	2·03	10·15
4,436	33·32	2·38	—	4,436	2·38	0·01	1,991	1·07	44·87	2,445	1·31	0·67
78,20,038	99·00	2·58	—	78,20,038	2·58	12·76	46,66,658	1·54	59·68	31,53,380	1·04	2·62
81,10,429	148·64	2·53	—	81,10,429	2·53	13·24	49,56,950	1·55	61·12	(c) 31,53,479	0·98	4·10
4,33,59,868	166·95	3·01	4,41,095	4,38,00,963	3·04	71·48	2,11,94,632	1·47	48·39	2,26,06,331	1·57	5·92
42,06,412	181·94	3·23	3,47,260	45,53,672	3·49	7·43	20,56,885	1·58	45·17	24,96,787	1·91	6·31
4,27,990	95·79	2·42	—	4,27,990	2·42	0·70	2,67,112	1·51	62·41	1,60,878	0·91	2·40
66,98,135	177·59	3·45	24,372	67,22,507	3·46	10·97	44,80,015	2·30	66·64	22,42,492	1·16	3·55
1,13,32,537	173·53	3·31	3,71,632	1,17,04,169	3·42	19·10	68,04,012	1·99	58·13	49,00,157	1·43	4·48
37,809	151·79	2·53	—	37,809	2·53	0·06	18,706	1·25	49·47	19,103	1·28	6·65
11,54,786	84·44	2·56	—	11,54,786	2·56	1·88	6,98,065	1·55	60·45	4,56,721	1·01	4·38
1,03,437	66·64	3·88	11,375	1,14,812	4·30	0·19	57,173	2·14	49·80	57,639	2·16	3·15
5,12,098	127·07	2·50	—	5,12,098	2·50	0·84	3,59,126	1·75	70·13	1,52,972	0·75	2·19
18,03,130	92·90	2·59	11,375	18,19,505	2·61	2·97	11,33,070	1·62	62·27	6,86,435	0·99	3·48
3,36,859	69·93	3·32	—	3,36,859	3·32	0·55	1,38,609	1·36	41·12	1,98,250	1·96	6·55
3,36,859	69·93	3·32	—	3,36,859	3·32	0·55	1,38,609	1·36	41·12	1,98,250	1·96	6·55
8,31,765	52·22	2·88	—	8,31,765	2·88	1·36	3,97,870	1·37	47·83	4,33,895	1·51	6·70
66,725	29·50	2·07	—	66,725	2·07	0·11	40,990	1·27	61·43	25,735	0·80	2·66
20,29,929	117·04	3·54	—	20,29,929	3·54	3·31	11,41,221	1·99	56·22	8,88,708	1·55	5·16
1,03,006	59·24	3·91	—	1,03,006	3·91	0·17	52,110	1·98	50·59	50,896	1·93	3·54
30,31,425	81·33	3·29	—	30,31,425	3·29	4·95	16,32,191	1·77	53·84	13,99,234	1·52	5·36
4,43,318	167·16	3·35	(f) 1,43,387	5,86,705	4·44	0·96	4,21,636	3·19	71·86	1,65,069	1·25	1·20
4,43,318	167·16	3·35	1,43,387	5,86,705	4·44	0·96	4,21,636	3·19	71·86	1,65,069	1·25	1·20
6,03,12,137	154·95	3·06	9,67,489	6,12,79,626	3·11	100·00	3,13,24,150	1·59	51·12	2,99,55,476	1·52	5·38

(c) Details not furnished.

(f) Harbour earnings.

* See also Statements Nos. 19 and 26.
‡ See also Statement No. 19.† See also Statements Nos. 19 and 27.
§ See also Statements Nos. 19 and 30.

WORKING EXPENSES in detail on the STANDARD and METRE GAUGE

Serial Number.	Railway.	Mean Mileage worked. (From Statement No. 25, pages 126 to 128.)	Maintenance of Way, Works, and Stations.			Locomotive.			Carriage and Waggon.			Traffic.		
			Amount.	Per Train-Mile.	Per cent. on Gross Earnings.	Amount.	Per Train-Mile.	Per cent. on Gross Earnings.	Amount.	Per Train-Mile.	Per cent. on Gross Earnings.	Amount.	Per Train-Mile.	Per cent. on Gross Earnings.
	<i>Standard Gauge.</i>	<i>Miles.</i>	<i>Rs.</i>	<i>Rs.</i>		<i>Rs.</i>	<i>Rs.</i>		<i>Rs.</i>	<i>Rs.</i>		<i>Rs.</i>	<i>Rs.</i>	
	STATE LINES WORKED BY COMPANIES.													
I.	East Indian (a) - - -	1,634'97	(b) 29,47,975	0'30	5'92	42,85,638	0'44	8'61	12,17,579	0'13	2'44	29,31,138	0'30	5'88
II.	Bengal-Nágpur - - -	859'76	9,20,411	0'60	14'34	8,25,316	0'54	12'86	2,92,271	0'15	3'62	4,77,657	0'31	7'44
III.	Indian Midland (d) - - -	753'78	7,34,354	0'50	14'54	9,70,161	0'07	19'20	2,42,484	0'17	4'90	4,63,894	0'32	9'18
VIII.	Godhra-Rutlam - - -	23'07	5,089	0'23	8'13	8,314	0'45	13'29	2,779	0'15	4'43	3,858	0'21	6'16
VI.	Wardha Coal - - -	(44'88)	—	—	—	—	—	—	—	—	—	—	—	—
VII.	Dhond-Manmád - - -	(145'44)	—	—	—	—	—	—	—	—	—	—	—	—
	Total - - -	3,272'48	46,08,329	0'35	7'37	60,89,429	0'46	9'74	16,95,194	0'13	2'71	38,76,547	0'29	6'20
	STATE LINES WORKED BY THE STATE.													
IX.	North-Western (State) (f) - -	2,449'20	39,57,101	0'79	23'77	65,74,009	0'75	22'46	18,11,333	0'21	6'19	25,27,590	0'29	8'03
X.	Hyderabad-Umarkot - - -	58'91	54,807	0'93	41'04	29,103	0'49	22'29	9,124	0'16	6'98	11,635	0'20	8'98
XI.	Oudh and Rohilkhand (State) -	702'53	11,02,120	0'42	12'65	10,95,796	0'42	12'57	3,41,834	0'13	3'92	6,88,894	0'26	7'90
XII.	Eastern Bengal (State) - - -	248'92	6,50,832	0'40	9'21	7,68,933	0'44	10'03	3,41,711	0'21	4'83	7,54,287	0'47	10'67
XIII.	Bengal Central - - -	125'01	99,019	0'33	12'64	1,08,070	0'36	18'79	43,298	0'15	5'53	1,05,431	0'36	13'46
XIV.	Calcutta Port Commissioners -	6'22	29,134	(h)	9'60	25,294	(h)	8'34	12,750	(h)	4'20	99,865	(h)	32'85
XV.	East Coast (State) - - -	51'29	—	—	—	1,13,745	0'65	38'28	13,972	0'08	4'70	74,374	0'43	25'03
	Total - - -	3,673'08	88,93,073	0'60	19'22	86,55,010	0'64	18'59	25,74,022	0'19	5'53	42,61,926	0'31	9'15
	LINES WORKED BY GUARANTEED COMPANIES.													
XVIII.	Great Indian Peninsula (i) -	1,490'08	52,61,052	0'53	13'55	78,06,711	0'79	20'11	19,19,580	0'20	4'95	31,63,517	0'31	8'00
XIX.	Bombay, Baroda, and Central India - - -	460'99	12,05,192	0'59	7'98	19,71,594	0'81	13'06	6,61,657	0'27	4'38	9,04,898	0'37	5'99
XX.	Madras - - -	839'22	10,15,516	0'39	9'67	20,18,116	0'76	19'21	5,02,678	0'19	4'78	8,99,985	0'34	8'57
	Total - - -	2,790'29	74,82,960	0'50	11'02	1,17,96,421	0'79	18'31	30,83,924	0'21	4'79	49,68,400	0'33	7'02
	ASSISTED COMPANIES.													
XXI.	Delhi-Umballa-Kalka - - -	161'40	Details included with the East Indian Railway.											
XXII.	Tarkessur - - -	22'33	18,261	0'36	6'45	23,753	0'46	8'39	6,777	0'13	2'39	16,212	0'32	5'73
	Total - - -	183'03	18,261	0'36	6'45	23,753	0'46	8'39	6,777	0'13	2'39	16,212	0'32	5'73
	LINES OWNED BY NATIVE STATES AND WORKED BY COMPANIES.													
XXIV.	Amráoti - - -	(5'44)	—	—	—	—	—	—	—	—	—	—	—	—
XXVI.	The Nizam's Guaranteed State (k) -	433'25	4,35,592	0'04	14'23	3,91,540	0'58	12'79	1,02,847	0'15	3'36	2,41,157	0'36	7'88
XXVII.	The Gakwar's Petlād - - -	13'85	5,182	0'27	8'10	8,403	0'44	13'24	2,825	0'14	4'42	3,922	0'20	6'13
	Total - - -	446'00	4,40,774	0'03	14'10	4,00,003	0'57	12'80	1,05,672	0'15	3'38	2,45,079	0'35	7'84
	LINE OWNED BY NATIVE STATE AND WORKED BY STATE RAILWAY AGENCY.													
XXIX.	Rájpura-Bhátinda - - -	107'04	1,02,190	0'54	14'03	1,35,839	0'72	19'85	42,495	0'23	6'21	54,426	0'29	7'95
	Total - - -	107'04	1,02,190	0'54	14'03	1,35,839	0'72	19'85	42,495	0'23	6'21	54,426	0'29	7'95
	Total Standard Gauge -	19,472'93	2,16,44,077	0'51	12'08	2,71,00,460	0'94	15'20	75,07,994	0'18	4'21	1,33,02,590	0'31	7'50

- (a) Including the Delhi-Umballa-Kalka Railway in the case of details only and foreign lines worked over.
 (b) Excluding Rs. 10,49,127 on account of a write-back to capital in connection with the increase made in the number of sleepers laid on the line.
 (c) Excluding the working expenses of the Delhi-Umballa-Kalka Railway (Rs. 5,73,284).
 (d) Including the Bhupál-Rájp State Railway and foreign lines worked over.
 (e) Expenditure incurred direct by the State.
 (f) Including the Jammu and Kashmir Railway (Native State section) and foreign lines worked over.
 (g) Including Rs. 14,381 on account of rent of leased lines.
 (h) Train-mileage not recorded.
 (i) N.B.—The mileages shown within parentheses are not included in the totals.

No. 30.

RAILWAYS during the Year ending the 31st December 1893.

General.			Steamboat.			Special and Miscellaneous, including Rent of Leased Lines and contribution to Provident Fund.			Total.			Railway.	Serial Number.
Amount.	Per Train-Mile.	Per cent. on Gross Earnings.	Amount.	Per Train-Mile.	Per cent. on Gross Earnings.	Amount.	Per Train-Mile.	Per cent. on Gross Earnings.	Amount.*	Per Train-Mile.*	Per cent. on Gross Earnings.*		
Rs.	Rs.		Rs.	Rs.		Rs.	Rs.		Rs.	Rs.		Standard Gauge, STATE LINES WORKED BY COMPANIES.	
18,56,271	0'19	3'73	68,138	0'01	0'14	9,32,174	0'10	1'87	(c) 1,30,09,020	1'41	27'44	East Indian (a)	I.
6,16,123	0'41	9'60	—	—	—	83,753	0'06	1'31	31,55,531	2'07	40'17	Bengal-Nagpur	II.
4,85,900	0'33	9'62	—	—	—	2,71,785	0'19	5'28	31,69,078	2'18	62'72	Indian Midland (d)	III.
2,366	0'13	3'78	—	—	—	3,043	0'20	5'32	20,040	1'32	41'01	Godhra-Ruthan	V.
(e) 1,485	—	—	—	—	—	—	—	—	(e) 1,485	—	—	Wardha Coal	VI.
(e) 12,862	—	—	—	—	—	—	—	—	(e) 12,862	—	—	Dhond-Manmâd	VII.
29,74,907	0'22	4'74	68,138	0'01	0'11	12,91,355	0'10	2'07	2,60,28,015	1'58	32'63	Total.	
												STATE LINES WORKED BY THE STATE.	
12,04,522	0'14	4'12	70,388	0'01	0'24	(g) 3,26,146	0'03	1'12	(g) 1,94,71,980	2'22	66'53	North-Western (State)	IX.
7,510	0'13	5'74	—	—	—	1,996	0'03	1'53	1,14,345	1'04	87'41	Hyderabad-Lamarkot	X.
3,85,417	0'15	4'42	—	—	—	84,813	0'03	0'98	36,08,874	1'41	42'44	Oudh and Rohilkhand (State).	XI.
2,31,454	0'18	4'12	2,61,246	0'18	4'12	53,549	0'03	0'76	30,92,012	1'91	43'74	Eastern Bengal (State)	XII.
1,03,999	0'35	13'27	—	—	—	8,720	0'03	1'11	4,63,537	1'58	50'80	Bengal Central	XIII.
13,170	(h)	4'34	—	—	—	6,947	(h)	2'20	1,86,800	(h)	61'50	Orissuta Port Com- missioners.	XIV.
86,518	0'21	12'29	13,006	0'07	4'38	24	—	0'01	2,51,639	1'44	84'00	East Coast (State)	XV.
20,42,590	0'15	4'39	3,74,640	0'03	0'80	4,82,005	0'04	1'04	2,72,83,366	2'00	58'50	Total.	
												LINES WORKED BY GUARANTEED COMPANIES.	
13,18,952	0'13	3'40	—	—	—	(j) 13,84,626	0'14	3'56	(j) 2,07,04,447	2'10	55'57	Great Indian Penin- sula.	XVIII.
5,56,337	0'23	3'69	—	—	—	2,18,324	0'09	1'46	55,18,002	2'27	36'55	Rombay, Baroda, and Central India.	XIX.
5,62,104	0'21	5'35	—	—	—	84,595	0'03	0'81	50,83,204	1'92	48'30	Madras	XX.
24,37,393	0'16	3'73	—	—	—	16,87,545	0'11	2'02	3,13,03,743	2'10	48'74	Total.	
												ASSOCIATED COMPANIES.	
—	—	—	—	—	—	—	—	—	5,75,244	1'20	48'00	Delhi-Udadhia-Kalka	XXI.
10,630	0'21	3'76	—	—	—	57,008	1'11	20'14	1,32,631	2'59	46'50	Turkessur	XXII.
10,630	0'21	3'76	—	—	—	57,008	1'11	20'14	7,07,915	1'34	47'78	Total.	
												LINES OWNED BY NATIVE STATES AND WORKED BY COMPANIES.	
(e) 885	—	—	—	—	—	—	—	—	(e) 885	—	—	Amrâoti	XXIV.
2,88,835	0'43	9'43	—	—	—	(l) 1,65,183	0'24	5'39	(l) 16,25,154	2'40	53'08	The Nizam's Guarant- eed State (j).	XXVI.
2,406	0'12	3'76	—	—	—	523	0'03	0'92	23,320	1'20	36'47	The Glaskwa's Pothul	XXVII.
2,92,126	0'42	9'32	—	—	—	1,65,706	0'24	5'30	16,49,365	2'36	52'74	Total	
												LINES OWNED BY NATIVE STATES AND WORKED BY STATE RAILWAY AGENCY.	
32,144	0'17	4'70	—	—	—	9,297	0'05	1'36	3,76,391	2'00	55'60	Rajpura-Bhatinda	XXIX.
32,144	0'17	4'70	—	—	—	9,297	0'05	1'36	3,76,391	2'00	55'00	Total.	
77,89,880	0'18	4'37	4,42,773	0'01	0'25	36,03,006	0'09	2'07	8,14,41,385	1'91	46'08	Total Standard Gauge.	

(z) Including the Wardha Coal, Dhond-Manmâd, Khargâon, and Amrâoti railways, but excluding the charges incurred direct by the State.

(j) Including Rs. 5,17,760 on account of rent of leased lines.

(k) Including the Beznâda extension and the Bezwada-Godâvari section of the East Coast railway, and 3'10 miles worked over twice by each train but excluding the charges incurred direct by the State.

(l) Including Rs. 1,42,220 on account of rent of leased lines.

* See also Statements Nos. 19 and 20.

WORKING EXPENSES in detail on the several STANDARD and METRE GAUGE

Serial Number.	Railway.	Mean Mileage worked. (From State- ment No. 26, pages 126 to 128.)	Maintenance of Way, Works, and Stations.			Locomotive.			Carriage and Waggon.			Traffic.		
			Amount.	Per Train-Mile.	Per cent. on Gross Earnings.	Amount.	Per Train-Mile.	Per cent. on Gross Earnings.	Amount.	Per Train-Mile.	Per cent. on Gross Earnings.	Amount.	Per Train-Mile.	Per cent. on Gross Earnings.
	<i>Metre Gauge.</i>	Miles.	Rs.	Rs.		Rs.	Rs.		Rs.	Rs.		Rs.	Rs.	
XXXIII.	STATE LINES WORKED BY COMPANIES.													
	Bengal and North-Western :													
	Tirhoot section - -	756'30	5,06,603	0'31	9'57	4,96,186	0'30	9'37	1,31,902	0'08	2'49	4,13,737	0'25	7'61
	Company's section - -													
XXXV.	Rajputana-Malwa - -	1,674'02	15,70,712	0'24	6'96	38,84,558	0'59	17'21	9,48,608	0'14	4'20	15,05,304	0'23	6'67
XXXVI.	Pálanpur-Deesa - -	2'56	359	0'19	8'09	763	0'41	17'19	223	0'12	5'03	329	0'18	7'42
XXXVII.	Southern Mahratta (a) - -	1,512'29	11,09,432	0'37	14'19	16,68,364	0'55	21'34	3,01,386	0'10	3'85	7,53,653	0'25	9'64
XL.	South Indian (b) - -	1,049'31	12,68,762	0'40	15'65	18,09,380	0'57	22'31	5,52,320	0'17	6'81	6,70,842	0'21	8'27
	Total - -	4,994'48	44,55,868	0'31	10'17	78,59,251	0'55	17'94	19,34,439	0'13	4'42	33,43,865	0'23	7'63
	STATE LINES WORKED BY THE STATE.													
XLIII.	Eastern Bengal (State) :—													
	Northern and Behar sections (including the Kaunia-Dharla, 2' 6" gauge, branch).	444'62	5,69,575	0'44	12'51	4,33,496	0'33	9'52	1,19,648	0'09	2'63	3,75,514	0'29	8'25
	Dacca section - -	85'92	84,302	0'48	19'70	71,632	0'40	16'74	23,003	0'13	5'37	57,691	0'33	13'48
XLIV.	Burma (State) - -	725'33	16,12,322	0'83	23'98	12,09,654	0'62	17'99	3,93,890	0'20	5'86	7,25,397	0'37	10'79
	Total - -	1,255'87	22,66,199	0'66	19'36	17,14,782	0'50	14'65	5,36,541	0'16	4'58	11,58,602	0'34	9'90
	ASSISTED COMPANIES.													
XLVI.	Deoghur - -	4'79	3,225	0'22	8'53	7,319	0'49	19'36	586	0'04	1'55	4,693	0'31	12'41
XLVII.	Rohilkund and Kumaon (Company's Section) (c).	263'18	1,55,019	0'34	13'42	1,66,408	0'37	14'42	40,743	0'09	3'53	1,14,743	0'25	9'94
XLVIII.	Bengal Dooars - -	28'84	6,041	0'23	5'26	14,616	0'55	12'73	1,193	0'04	1'04	18,023	0'67	15'70
XLIX.	Dibru-Sadiya - -	77'50	1,22,176	0'59	23'86	71,606	0'35	13'98	45,289	0'22	8'84	38,792	0'19	7'58
	Total - -	374'31	2,86,461	0'41	15'74	2,60,039	0'37	14'29	87,811	0'13	4'83	1,76,256	0'25	9'69
	LINE OWNED BY NATIVE STATE AND WORKED BY COMPANY.													
LI.	The Gaekwar's Mehsána -	92'63	23,468	0'23	6'96	57,976	0'57	17'21	14,176	0'14	4'20	22,483	0'22	6'67
	Total - -	92'63	23,468	0'23	6'96	57,976	0'57	17'21	14,176	0'14	4'20	22,483	0'22	6'67
	LINES OWNED AND WORKED BY NATIVE STATES.													
LIV.	Jodhpore-Bikaner :—													
	Jodhpore section - -	306'30	1,29,701	0'45	15'59	1,60,078	0'55	19'25	20,992	0'07	2'52	52,343	0'18	6'29
	Bikaner section - -	43'50	10,150	0'32	15'21	19,161	0'60	28'71	2,147	0'06	3'22	5,691	0'18	8'53
LVI.	Bhávnaagar - Gondal - Juná- garh-Forbandar.	333'55	4,27,135	0'74	21'04	2,87,223	0'50	14'15	51,073	0'09	2'52	1,81,042	0'31	8'92
LVII.	Jetalsar-Rájkot - -	33'44	3,624	0'14	3'52	—	—	—	—	—	—	—	—	—
	Total - -	716'79	5,70,610	0'62	18'82	4,66,462	0'52	15'93	74,212	0'08	2'53	2,39,076	0'27	8'16
	FOREIGN LINE.													
LV.	West of India Portuguese -	51'00	68,834	0'52	11'73	98,818	0'75	16'84	14,286	0'11	2'44	46,061	0'35	7'85
	Total - -	51'00	68,834	0'52	11'73	98,818	0'75	16'84	14,286	0'11	2'44	46,061	0'35	7'85
	Total Metre Gauge -	7,485'08	76,71,440	0'39	12'52	1,04,57,328	0'53	17'06	26,61,465	0'14	4'34	49,86,343	0'26	8'14

(a) Including the Guntakal-Mysore Frontier, the Southern Mahratta (Mysore section) Kolhápúr, the Yesvantpur-Mysore Frontier, and the Mysore-Nanjangud Railways.

(b) Including the Pondicherry Railway.

(c) Including the Rohilkund and Kumaon Railway (Lucknow-Bareilly section).

No. 30—concluded.

RAILWAYS during the YEAR ending the 31st December 1893—concluded.

General.			Steamboat.			Special and Miscellaneous, including the Rent of Leased Lines and contribution to Provident Fund.			Total.			Railway.	Serial Number.
Amount.	Per Train-Mile.	Per cent. on Gross Earnings.	Amount.	Per Train-Mile.	Per cent. on Gross Earnings.	Amount.	Per Train-Mile.	Per cent. on Gross Earnings.	Amount.*	Per Train-Mile.*	Per cent. on Gross Earnings.*		
Rs.	Rs.		Rs.	Rs.		Rs.	Rs.		Rs.	Rs.			
3,89,419	0'24	7'36	2,20,949	0'14	4'17	1,28,652	0'08	2'43	22,87,448	1'40	43'20	<i>Metre Gauge.</i> STATE LINES WORKED BY COMPANIES. Bengal and North- Western— Tirhoot section. { Company's section.	XXXIII.
11,86,318	0'18	5'26	—	—	—	1,86,085	0'03	0'82	92,81,585	1'41	41'12	Rajputana-Malwa -	XXXV.
278	0'15	6'27	—	—	—	39	0'02	0'87	1,991	1'07	44'87	Pálanpur-Deesa -	XXXVI.
7,72,038	0'25	9'87	—	—	—	61,785	0'02	0'79	46,66,668	1'54	59'68	Southern Mahratta (a)	XXXVII.
5,90,560	0'18	7'28	—	—	—	65,086	0'02	0'80	49,56,950	1'55	61'12	South Indian (b)	XL.
29,38,613	0'20	6'71	2,20,949	0'02	0'51	4,41,647	0'03	1'01	2,11,94,632	1'47	48'39	Total.	
2,21,286	0'17	4'86	2,99,738	0'23	6'58	37,628	0'03	0'82	20,56,885	1'58	45'17	STATE LINES WORKED BY THE STATE. Eastern Bengal (State)— Northern and Behar sections (including the Kánnia-Dharla, 2' 6" gauge branch). Dacca section.	XLIII.
23,394	0'13	5'47	—	—	—	7,090	0'04	1'65	2,67,112	1'51	62'41	Burma (State) -	XLIV.
4,08,143	0'21	6'07	73,011	0'04	1'09	57,598	0'03	0'86	44,80,015	2'30	66'64	Total.	
6,52,823	0'19	5'59	3,72,749	0'11	3'18	1,02,316	0'03	0'87	68,04,012	1'99	58'13	ASSISTED COMPANIES. Deoghur -	XLVI.
2,633	0'17	6'97	—	—	—	250	0'02	0'66	18,706	1'25	49'47	Rohilkund and Ku- maon (Company's section) (c).	XLVII
1,38,249	0'31	11'97	—	—	—	82,813	0'19	7'17	6,98,065	1'55	60'46	Bengal Doonars -	XLVIII
6,485	0'24	5'65	9,870	0'37	8'60	940	0'04	0'82	57,178	2'14	49'80	Dibru-Sadiya -	XLIX.
79,930	0'39	15'61	—	—	—	1,333	0'01	0'26	3,59,126	1'75	70'13	Total.	
2,27,297	0'33	12'49	9,870	0'01	0'54	85,336	0'12	4'69	11,33,070	1'62	62'27	LINE OWNED BY NATIVE STATE AND WORKED BY COMPANY. The Gaekwar's Meh- sána.	LI.
17,728	0'17	5'26	—	—	—	2,778	0'03	0'82	1,38,609	1'36	41'12	Total.	
17,728	0'17	5'26	—	—	—	2,778	0'03	0'82	1,38,609	1'36	41'12	LINES OWNED AND WORKED BY NATIVE STATES. Jodhpore-Bickaneer— Jodhpore section.	LV.
33,740	0'13	4'06	—	—	—	1,016	—	0'12	3,97,870	1'37	47'83	Bickaneer section.	LVI.
3,679	0'11	5'52	—	—	—	162	—	0'24	40,390	1'27	61'43	Bhávragar - Gondal- Junágarh-Porbandar.	LVII
1,63,791	0'29	8'07	—	—	—	30,957	0'06	1'52	11,41,221	1'99	56'22	Total.	
—	—	—	—	—	—	(d) 48,486	1'84	47'07	52,110	1'98	50'59	FOREIGN LINES. West of India Portu- guese.	LX.
2,01,210	0'22	6'87	—	—	—	80,621	0'09	2'66	16,32,191	1'77	53'84	Total.	
1,01,927	0'77	17'37	(e) 75,292	0'57	12'83	16,418	0'12	2'80	4,21,636	3'19	71'86	Total.	
1,01,927	0'77	17'37	75,292	0'57	12'83	16,418	0'12	2'80	4,21,636	3'19	71'86	Total.	
41,39,598	0'21	6'76	6,78,860	0'03	1'11	7,29,116	0'04	1'19	3,13,24,150	1'59	51'12	Total.	

(d) Charge made by the Bhávnagar-Gondal-Junágarh-Porbandar Railway for working the line, details of which are not available.

(f) Harbour charges.

* See also Statements Nos. 19 and 29.

CHAPTER IX.

RATES AND FARES.

Revised Rates for the Carriage of Coal and Railway Materials.—In addition to the railway mentioned in the last report, the Great Indian Peninsula and Morvi Railways, have expressed their inability to accept the new rates for the carriage of coal and railway materials prescribed in Government of India Circular No. 17 Railway, dated the 30th October 1891; and the Bombay, Baroda and Central India Railway (including the Rajputana-Malwa Railway has declined to accept the rates pending a reference to the Home Board.

The Bhávnagar-Gondal-Junágarh-Porbandar Railway administration has accepted the rates for coal and railway materials for the home line, but neither the rates of railway construction materials for other lines, nor for coal, whether for the public or foreign lines. With the exception of the foregoing, nothing further has transpired as regards rates and fares since the publication of last year's report, and the remarks given in paragraphs 1 and 2 thereof apply also to the period under review.

2. *Ordinary Passenger Fares and Goods Rates.*—Statement No. 31 on pages 156 to 159 shows the ordinary passenger fares and goods rates in force on the standard and metre gauge railways on the 31st December 1893.

3. *Alterations in Rates and Fares.*—Particulars of the chief alterations made in the coaching fares and goods rates during the year under review are given below. In taking their equivalents in English money and weight, the rupee has been converted at 1s. 4d., and a ton has been taken as equal to 27·22 maunds.

COACHING FARES.

BENGAL-NÁGPUR RAILWAY (STANDARD GAUGE).

4. From the 1st November 1893, the single journey first and second class fares between Asansol and Nágpur were reduced from Rs. 58-13-0 (3l. 18s. 5d.) and Rs. 26-2-0 (1l. 14s. 10d.) respectively to Rs. 47-2-0 (3l. 2s. 10d.) and Rs. 23-9-0 (1l. 11s. 5d.) for passengers travelling between Asansol and Bhusával and beyond *viâ* the Bengal-Nágpur Railway.

INDIAN MIDLAND RAILWAY SYSTEM (STANDARD GAUGE).

5. From the 1st January 1893, special third-class single journey fares between certain stations on the Jhánsi-Cawnpore section and Agra Fort, and Mánikpur and *viâ* were introduced. A similar concession was also granted to passengers travelling between certain stations on the Jhánsi-Agra section, and Mánikpur and *viâ*, with effect from 1st October 1893.

BOMBAY, BARODA, AND CENTRAL INDIA RAILWAY SYSTEM (STANDARD AND METRE GAUGES).

6. With the exceptions noted below, no change was made in the passenger fares and coaching rates during the year 1893:—

(a) The Great Indian Peninsula Railway having introduced the following rules, this company also adopted the same with effect from the 1st January 1893:—

“Male servants in attendance upon invalid military passengers travelling first or second class under Government warrant will be allowed to travel in first-class carriage at second-class fare, and in second-class carriage at intermediate class fare, when it is certified that such attendance is necessary during the journey, the certificate being signed by a Military or Civil Surgeon.”

(b.) The following rates for treasure, including specie, &c., the property of Government, were adopted with effect from the 1st April 1893 :—

Up to 27 maunds (0·99 ton)	-	$1\frac{2}{3}$ pies per maund	(3·781 <i>d.</i> per ton)	per mile.
Above 27 (0·99 ton) and up to				
81 maunds (29·8 tons)	-	$1\frac{1}{3}$ „ „	(3·024 <i>d.</i> „)	„
Above 81 (2·98 tons) and up to				
270 maunds (9·92 tons)	-	1 „ „	(2·268 <i>d.</i> „)	„
Over 270 maunds (992 tons)	-	$\frac{2}{3}$ „ „	(1·512 <i>d.</i> „)	„

Copper coins by passenger trains in quantities of 5 maunds (0·18 ton) and under, $1\frac{1}{3}$ pies per maund (3·024*d.* per ton) per mile; in quantities of over 5 maunds (0·18 ton), $\frac{2}{3}$ pie per maund (1·512*d.* per ton) per mile, subject to a minimum charge as for 10 maunds (0·39 ton).

ODDH AND ROHILKHAND (STATE) RAILWAY (STANDARD GAUGE).

7. On the 1st January 1893 the charge for first-class reserved accommodation was reduced to three single fares per compartment, subject to a minimum charge of Rs. 10 (13*s.* 4*d.*)

EAST COAST (STATE) RAILWAY (STANDARD GAUGE).

8. On the opening of the line north of the Godávári on the 21st August 1893, the rates per mile for passengers were fixed as follows :—

	Pies.
First-class	12 (1 <i>d.</i>)
Second-class	6 (0·50 <i>d.</i>)
Third-class	$1\frac{1}{2}$ (0·125 <i>d.</i>)

On and from the 1st January 1894, however, a fourth class (cooly class) for local booking only, was introduced on this line at the rate of $1\frac{1}{2}$ pies (0·125*d.*) per mile, and the ordinary third-class fare increased from $1\frac{1}{2}$ to 2 pies (0·125*d.* to 0·167*d.*) per mile.

BENGAL AND NORTH-WESTERN RAILWAY SYSTEM (METRE GAUGE).

9. Through bookings of specie *viâ* Bahramghat and *viâ* Ajodhya Ghát was introduced during the year under report.

GOODS RATES.

EAST INDIAN RAILWAY SYSTEM (STANDARD GAUGE).

10. The majority of the changes during the year were introduced with the object of equalising charges by alternative routes where the distances by two or more routes are approximately the same. For example, goods rates were equalised by the three routes between Umballa and stations above and Moghal and Serai and stations below, viz., *viâ* the Delhi-Umballa-Kalka Railway to Delhi, and thence by the East Indian Railway *viâ* the North-Western (State) Railway to Gházibad, and thence by the East Indian Railway and *viâ* the North-Western (State) Railway to Saháranpar, and thence by the Oudh and Rohilkhand (State) Railway to Moghal Serai.

Reductions were made in rates with the object of assisting traffic in machinery and iron to manufacturing centres and to help distribution of products, such as yarn and leather.

Rates for pipes were reduced in connection with the waterworks and drainage schemes at Arrah and Benares respectively.

Charges were quoted for a new item of traffic, viz., kerosine oil in bulk, and endeavours were made to develop the traffic which has recently sprung up in Saboy or Bunkas grass for paper manufacture from the Bengal and North-Western Railway, and in stone ballast on the Delhi-Umballa-Kalka line.

Reductions were made for kerosine oil, iron, and salt sent from Howrah to the Bengal and North-Western Railway.

BENGAL-NÁGPUR RAILWAY (STANDARD GAUGE).

11. The rate for firewood when conveyed 150 miles and over was reduced from $\frac{1}{4}$ th to $\frac{1}{10}$ th of a pie per maund (0·567*d.* to 0·227*d.* per ton) per mile with effect from 1st March 1893. In compliance with Government orders reduced rates for coal were introduced from 1st July 1893. For details, *vide* Statement No. 31 on pages 156 and 159.

INDIAN MIDLAND RAILWAY SYSTEM (STANDARD GAUGE).

12. To equalise the rates with other routes special rates per maund on actual weight were introduced from 1st November 1893 for the carriage of grain and common seeds when booked from, and from *viâ* Katni (*viâ* Mánikpur) to *viâ* Agra cantonment to certain stations on the Bombay, Baroda, and Central India Railway.

Special through rates were also introduced on the line from time to time during the year for the carriage of the following items of goods traffic from and to certain stations on and *viâ* the Indian Midland Railway *viâ* Itársi to and from Bombay.

Cotton, kerosine oil, sugar, zinc, iron and steel, turmeric, gum, pipes, iron (wrought), red-earth, piece-goods, yarn and cotton twist, pressed and unpressed, ghee in barrels, tubs, &c., and machinery.

Special rates were also quoted during the year for the carriage of the following description of goods when passing over the Indian Midland Railway from and to other adjoining railways, or when booked from or to stations on the Indian Midland Railway :

Salt, sugar and jargree, grain and common seeds, firebricks, tiles, and clay.

NORTH-WESTERN (STATE) RAILWAY SYSTEM (STANDARD GAUGE).

13. The only change of any importance in rates during the year was the removal of the additional short distance charge levied on goods carried for 75 miles or less over the North-Western (State) Railway in through booking with foreign lines.

Amongst minor alterations it may be mentioned that to encourage salt traffic from Mári and Guniyál stations, the telescopic rates charged in booking from Khewra and Miani were extended to these stations.

ODDH AND ROHILKHAND (STATE) RAILWAY (STANDARD GAUGE).

14. The alterations made on this line were comparatively unimportant, being mainly confined to small modifications made to equalise rates with other competing lines.

EASTERN BENGAL (STATE) RAILWAY SYSTEM (STANDARD, METRE, AND SPECIAL GAUGES).

15. The rate of 8 pies (0·667*d.*) per ton per mile for the carriage of kerosine oil in bulk, referred to in the last report, was continued during the year, the charge on tank waggons, with oil in bulk, being made on the carrying capacity of 10 tons per waggon. The return charge for the haulage of empty tank waggons of 3 annas (3*d.*) per mile was abandoned from the 1st September 1893.

CALCÚTTA PORT COMMISSIONERS' RAILWAY (STANDARD GAUGE).

16. On and from 1st January 1893 the Port Trust Railway adopted the classification of goods in force on the Eastern Bengal (State) Railway.

EAST COAST (STATE) RAILWAY (STANDARD GAUGE).

17. Under orders of the Government of India, the classification of the Madras Railway has been adopted on this line since its opening for traffic. A few minor reductions in rates were made in order to compete with cart traffic; but as they had only been in force for a comparatively short time, no marked improvement has taken place, and nothing of any value can, therefore be placed on record as to the effect of the reduced rates for the period dealt with in this report.

GREAT INDIAN PENINSULA RAILWAY SYSTEM (STANDARD GAUGE).

18. Various reductions were made in the through rates charged on turmeric, ghee, and machinery between Agra and Cawnpore and Bombay in conjunction with the Indian Midland Railway in equalisation with the rates charged by other lines. Through rates were also adjusted on certain commodities to equalise the rates charged

viâ Madras line with those *viâ* the Southern Mahratta Railway. Reduced rates were also introduced to foster traffic in wheat and common seeds between Agra and Poona and Madras, and in leather booked from Cawnpore to the latter station.

BOMBAY, BARODA, AND CENTRAL INDIA RAILWAY SYSTEM (STANDARD AND METRE GAUGES).

19. The principal changes in goods rates made during the year are as given below :—

(a.) To encourage traffic, the following rule was introduced with effect from the 1st January 1893 :

“Timber when booked from *viâ* Cawnpore or from *viâ* Háthras Road to stations on the Bombay, Baroda, and Central India Railway Company's system should be charged at the classified rates on actual weight ; but if the actual weight be less, the minimum charge should be 81 maunds (2·98 tons) per truck as used on the despatching railway.”

(b.) With effect from the 1st January 1893, the additional short-distance charge of 3 pies per maund (6·805*d.* per ton) levied on goods carried 75 miles or less in through-booking with the North-Western (State) Railway was abolished, the North-Western (State) Railway having withdrawn their similar charge in through booking with the Bombay, Baroda, and Central India Railway Company's system, with effect from the same date.

(c.) The rate for piece-goods, yarn, and cotton twist, pressed and bound, or in boxes, from and *viâ* Ferozepore cantonment to any station in Bombay, was reduced from Rs. 2-15-8 to Rs. 2-14-5 per maund (5*l.* 8*s.* 1·487*d.* to 5*l.* 5*s.* 3·462*d.* per ton) so as to equalise with the rate from Amritsar to Bombay *viâ* Delhi, with effect from the 1st October 1893.

(d.) Consequent upon alterations on neighbouring railways, reductions were made in the rates charged on machinery from Bombay to stations served by the railway *viâ* Cawnpore, Agra, Háthras, and Delhi ; and a reduced rate was also introduced in order to encourage the export of vegetable oil from Bombay *viâ* Ferozepore. The minimum charge for dynamite and gelatine was raised from 20 maunds (0·73 ton) to 27 maunds (0·99 ton) with effect from 1st June 1893, and the carriage by rail of dynamite was arranged for from 15th September to 31st March, instead of from 15th October to 31st March in each year.

SOUTHERN MAHRATTA RAILWAY SYSTEM (METRE GAUGE).

20. There were numerous small changes in the goods tariff during the year 1893.

BENGAL AND NORTH-WESTERN RAILWAY SYSTEM (METRE GAUGE).

21. The ordinary class rates and the rates for certain special-class goods between stations on the Bengal and North-Western Railway west of Bhágabánpur and Mokameh Ghât were reduced to equalise with the rates *viâ* Dígha Ghât to stations on the East Indian Railway below Mokameh Ghât. This was done to admit of traffic going *viâ* Mokameh Ghât, and to get the benefit of the waggon ferry there.

Rates for grain and seeds from Khanwa Ghât and Pratápganj to Sahebgunge, Bhágalpur, Rajmehal, Colgong, Azínganj, Nalháti, Bhadreswar Ghât, Howrah, Sealdah, and Chitpore were reduced *viâ* Mokameh Ghât to equalise with the rates *viâ* the Eastern Bengal (State) Railway and Manihári.

Special reduced rates for Bunkas grass were quoted from Naipálganj road and Mankapur to Howrah, Bally, and Raneegunge, which resulted in a considerable traffic being carried.

Rates for sugar from Tirhoot to the North-Western Provinces were equalised *viâ* Dígha Ghât and *viâ* Bahramghat.

SOUTH INDIAN RAILWAY (METRE GAUGE).

22. From 1st January 1893, the State railway standard goods classification was introduced.

BURMA (STATE) RAILWAY (METRE GAUGE).

23. With effect from 1st January 1893, the goods classification was assimilated with that in force on the East Indian Railway, in accordance with the orders of the Government.

JODHPORE-BICKANEER RAILWAY (METRE GAUGE).

24. On the opening of the Merta-Road-Kucháman-Road section, the goods rates were reduced and revised. For details, *vide* Statement No. 31 on pages 158 and 159.

The new rates are subject to a terminal charge of 3 pies per maund (6·805*d.* per ton).

A special rate of 4 annas and 2 pies per maund (9*s.* 5·417*d.* per ton) for salt from Pachpadra to stations south of Dholpur *via* Kucháman Road was introduced up to 19th March 1893, and was reduced to 3 annas 9 pies (8*s.* 6·075*d.* per ton) after that date.

BHÁVNAGAR-GONDAL-JUNÁGARH-PORBANDAR RAILWAY (METRE GAUGE).

25. A few changes in the classification of goods were made in order to assimilate with the classification on the Bombay, Baroda, and Central India Railway.

STATEMENT No. 31.

PASSENGER FARES and GOODS RATES in Pies on the STANDARD and METRE GAUGE
RAILWAYS on the 31st December 1893.

PASSENGER FARES and GOODS RATES in Pies on the STANDARD and

(The fares and rates shown in this table can be converted into

Serial Number.	Railway.	Passenger Fares per Mile.				Goods		
		1st Class.	2nd Class.	3rd or Intermediate Class.	Lowest Class (3rd or 4th).	Special Class per Ton per Mile.		1st Per Ton per Mile.
						Food-Grains.	Coal.	
	<i>Standard Gauge.</i>	Pies.	Pies.	Pies.	Pies.	Pies.	Pies.	Pies.
	STATE LINES WORKED BY COMPANIES.							
I.	East Indian (a) - - - -	18'00	9'00	4'50	2'50	(b)	(c)	9'07
II.	Bengal-Nágpur - - - -	18'00	8'00	3'00	2'00	(d)	(c) & (e)	9'07
III.	Indian Midland (f) - - -	12'00	6'00	(g) 3'00	(h)	{ 2'72 to 9'07	{ 2'72 to 9'07	{ 9'07
V.	Godhra-Rutlam - - - -	12'00	6'00	—	2'50	(i) 7'89	10'89	10'89
VI.	Wardha Coal - - - -	18'00	9'00	(g) 4'00	(j) 2'00	—	—	Same as on
	STATE LINES WORKED BY THE STATE.							
IX.	North-Western (State) (k) - -	12'00	6'00	3'00	{ 2'00, 2'25 & 2'50	{ 3'40, 4'54, 5'44 & 6'80	{ 2'72, 2'99, 4'08, 4'49 & 9'07	{ 9'07
XI.	Oudh and Rohilkhand (State) - -	12'00	6'00	4'00	{ 2'50 & (l) 3'00	{ 4'54 to 9'07	{ 2'72 to 4'49	{ 9'07
XII.	Eastern Bengal (State) - - -	{ 18'00 & (m) 12'00	{ 9'00 & (m) 6'00	4'00	2'50	{ 4'54 to 5'44	{ 4'54 to 5'44	{ 9'07
XIII.	Bengal Central - - - -	12'00	6'00	4'50	{ 3'00 & (n) 2'50	{ 3'89 to 5'44	{ 3'89 to 5'44	{ 9'07
XIV.	Calcutta Port Commissioners' - -	—	—	—	There is no passenger traffic on this line.			Same as
XV.	East Coast (State) - - - -	12'00	6'00	—	1'50	9'07	9'07	9'07
	LINES WORKED BY GUARANTEED COMPANIES.							
XVIII.	Great Indian Peninsula (p) - -	12'00	6'00	(g) 3'00	(j) 2'50	{ 3'40 to 8'07	{ 4'52 & 5'17	{ (q) 10'08 (r) 9'58 (s) 9'07
XIX.	Bombay, Baroda and Central India -	12'00	6'00	3'00	{ 2'25 to 2'50	(t)	(u)	10'89
XX.	Madras - - - -	12'00	6'00	—	{ 1'50 & 2'50	{ 4'03 & 8'60	{ 3'02, 4'03, 6'05, 8'07 & 10'08	{ 10'08
XXII.	Tarkessur - - - -	12'00	6'00	4'50	3'00	Same as on the East		
	LINES OWNED BY NATIVE STATES AND WORKED BY COMPANIES.							
XXVI.	The Nizam's Guaranteed State (v) -	18'00	6'00	(g) 2'50	(f) 2'00	{ (w) 7'06, (x) 5'04 to 6'05	{ 4'54	10'08
XVII.	The Gaekwar's Petlad - - - -	12'00	6'00	—	2'50	(z) 7'89	10'89	10'89

(a) The East Indian Railway fares and rates obtain also on the Delhi-Umballa-Kalka Railway, excepting between Umballa and Kalka, for which the figures are double of those herein quoted.

(b) All stations except Howrah:

For first 100 miles - 9'07 pies per ton per mile.
 " extra distances over 100 and up to 450 miles - 4'63 " "
 " extra distances above 450 miles - 3'27 " "

(c) For all distances up to 400 miles inclusive - 4'49 pies per ton per mile

For distances over 400 miles:

For first 400 miles - 4'49 pies per ton per mile

For distances in excess of 400 miles - 2'99 " "

For all distances up to 400 miles inclusive - 4'08 pies " per ton per mile

For all distances over 400 miles:

For first 400 miles - 4'08 pies per ton per mile

For distances in excess of 400 miles - 2'72 " "

(d) 9'07 pies per ton per mile for distances from 1 to 300.

8'06 " " " " 301 to 375.

7'31 " " " " 376 to 400.

6'55 " " " " 401 to 450.

6'05 " " " " 451 to 475.

5'29 " " " " 476 to 525.

5'04 " " " " 526 to 550.

4'29 " " " " 551 to 600.

3'02 " " " " over 600 miles.

(e) For consignments of less than 300 maunds, or 11 tons, the rate is 9'07 pies per ton per mile.

(f) Including the Bhopal-Itarsi Railway.

N.B.—The rates under column " Per ton per mile " have, as far as possible, been calculated from the actual rates in force.

No. 31.

METRE GAUGE RAILWAYS on the 31st December 1893.

English money at 1s. 4d. to the rupee by taking 1 pie = 0.083d.)

Rates.										Railway.	Serial Number.
Class.		2nd Class.		3rd Class.		4th Class.		5th Class.			
Per Maund per Mile.	Per Ton per Mile.	Per Maund per Mile.	Per Ton per Mile.	Per Maund per Mile.	Per Ton per Mile.	Per Maund per Mile.	Per Ton per Mile.	Per Maund per Mile.	Per Ton per Mile.		
Pies.	Pies.	Pies.	Pies.	Pies.	Pies.	Pies.	Pies.	Pies.	Pies.	Standard Gauge. STATE LINES WORKED BY COMPANIES. East Indian (a) - - - I. Bengal-Nágpur - - - II. Indian Midland (f) - - - III. Godhra-Rutlam - - - V. Wardha coal - - - VI	
0'33	13'61	0'50	18'15	0'67	22'68	0'83	27'22	1'00	1'00		
0'33	13'61	0'50	18'15	0'67	22'68	0'83	27'22	1'00	1'00		
0'33	13'61	0'50	18'15	0'67	22'68	0'83	27'22	1'00	1'00		
0'40	16'33	0'60	21'78	0'80	27'22	1'00	32'66	1'20	1'20		
the Great Indian Peninsula Railway.											
										STATE LINES WORKED BY THE STATE.	
0'33	13'61	0'50	18'15	0'67	22'68	0'83	27'22	1'00	1'00	North-Western (State) (k) -	IX.
0'33	13'61	0'50	18'15	0'67	22'68	0'83	27'22	1'00	1'00	Oudh and Rohilkhand (State) -	XI.
0'33	13'61	0'50	18'15	0'67	22'68	0'83	27'22	1'00	1'00	Eastern Bengal (State) -	XII.
0'33	(o) 8'89	(o) 0'14	(o) 4'54	(o) 0'17	(o) 5'44	(o) 0'20	(o) 6'80	(o) 0'25	1'00	Bengal Central -	XIII.
on the Eastern Bengal (State) Railway.											
0'33	13'61	0'50	18'15	0'67	22'68	0'83	27'22	1'00	1'00	Calcutta Port Commissioners' -	XIV.
										East Coast (State) - - -	XV.
										LINES WORKED BY GUARANTEED COMPANIES.	
(g) 0'37 (r) 0'35 (s) 0'33	(g) 14'11 (r) 14'11 (s) 13'61	(g) 0'52 (r) 0'52 (s) 0'50	20'16	0'74	{ (g) 28'23 (r) 28'23 (s) 25'20	{ (g) 1'04 (r) 1'04 (s) 0'93	{ (g) 40'33 (r) 40'33 (s) 34'28	{ (g) 1'48 (r) 1'48 (s) 1'26	1'20	} Great Indian Peninsula (p) -	XVIII.
0'40	16'33	0'60									
0'37	13'61	0'50	18'15	0'67	24'20	0'89	36'29	1'33	1'33	Madras - - - -	XX.
Indian Railway.											
										ASSISTED COMPANY.	
										Tarkessur - - - -	XXII.
										LINES OWNED BY NATIVE STATES AND WORKED BY COMPANIES.	
0'37	14'11	0'52	20'16	0'74	28'23	1'04	40'33	1'48	1'48	The Nizam's Guaranteed State (v)	XXVI.
0'40	16'33	0'60	21'78	0'80	27'22	1'00	32'66	1'20	1'20	The Gaekwar's Petlād - -	XXVII.

(g) Third-class by mail trains.

(h) { First 100 miles 2.67 pies.

Next " 2.50 "

" 200 " 2.33 "

Above 400 " 2.00 "

(i) This rate applies to consignments weighing 160 maunds, or 5.88 tons, and over.

(j) By trains other than mail.

(k) The North-Western (State) Railway fares and rates obtain also on the Hyderabad-Umarkot, Rájpurá-Bhátinda, and Jammu and Kashmir Railways.

(l) By mail trains on main line.

(m) Between Calcutta and Káncrapúra.

(n) Between Dum-Dum and Duttápur.

(o) Special class rates A. to D.

(p) Including the Dhond-Manmád, Khámgaon, and Amráoti railways.

(q) For distances from 1 to 400 miles.

(r) " " " 401 to 600 "

(s) " " " above 600 "

(t) & (u)

Food-grains.	Coal.
Per ton.	Per ton.
per mile	per mile
Pies.	Pies.

When in consignments of 160 maunds or 5.88 tons and over.

1 to 100 miles

101 to 200 "

201 to 400 "

Over 400 "

-

-

-

-

-

-

-

(v) Includes the Bezvada Extension Railway and the Bezvada-Godávári section of the East Coast Railway.

(w) Local.

(x) Through booking.

STATEMENT

PASSENGER FARES and GOODS RATES in Pies on the STANDARD and

(The fares and rates shown in this table can be converted into

Serial Number.	Railway.	Passenger Fares per Mile.				Goods			
		1st Class.	2nd Class.	3rd or Intermediate Class.	Lowest Class (3rd or 4th).	Special Class per Ton per Mile.		1st	
						Food-Grains.	Coal.	Per Ton per Mile.	
	<i>Metre Gauge.</i>	Pies.	Pies.	Pies.	Pies.	Pies.	Pies.	Pies.	
	STATE LINES WORKED BY COMPANIES.								
XXXIII.	Bengal and North-Western—								
	Tirhoot section - - -	18'00	9'00	4'00	2'00	{ 5'44 to 6'80 }	4'49	9'07	
	Company's section - - -								
XXXIV.	Rohilkund and Kumaon (Lucknow-Bareilly section).	18'00	9'00	4'00	2'00	6'80	5'44	9'07	
XXXV.	Rajputana-Malwa - - -	15'00	8'00	3'00	{ 2'00 to 2'25 }	(a)	(a)	9'53	
XXXVII.	Pálanpur-Deesa - - -	15'00	8'00	—	2'25	(b) 6'80	9'53	9'53	
XXXVII.	Southern Mahratta (c) - - -	12'00	6'00	—	{ 2'00 & (d) 2'50 }	{ 3'02 to 6'80 }	{ 4'54 to 9'07 }	9'07	
XL.	South Indian (e) - - -	12'00	4'00	—	2'00	8'51	8'51	9'07	
	STATE LINES WORKED BY THE STATE.								
XLIII.	Eastern Bengal (State)—								
	Northern and Behar sections (including the Kaunia-Dharila, 2'6" gauge, branch).	18'00	9'00	4'00	2'50	{ 3'89 to 5'44 }	{ 3'89 to 5'44 }	9'07	
	Dacca section - - -	18'00	9'00	4'00	2'50	5'44	5'44	9'07	
XLIV.	Burma (State) (f) - - -	15'00	6'00	—	3'00	{ 3'89 to 5'44 }	9'25	9'25	
	ASSISTED COMPANIES.								
XLVI.	Deoghur - - -	24'00	—	—	6'00	—	—	—	
XLVII.	Rohilkund and Kumaon (Company's section).	35'00	15'00	—	3'11	6'80	5'44	9'07	
XLVIII.	Bengal Doars - - -	36'00	21'00	—	3'00	Fixed station-to-station rates are			
XLIX.	Dibru-Sadiya - - -	18'00	9'00	4'00	—	—	4'08	27'22	
	LINE OWNED BY NATIVE STATE AND WORKED BY COMPANY.								
LI.	The Gaekwar's Melsána - - -	15'00	8'00	—	2'25	(b) 6'80	9'53	9'53	
	LINES OWNED AND WORKED BY NATIVE STATES.								
LV.	Jodhpore-Bickaneer—								
	Jodhpore section - - -	18'00	6'00	—	2'00	(g) & (h)	(g) & (h)	13'61	
	Bickaneer section - - -								
LVI.	Bhávnagar-Gondal-Junágarh-Portbandar. (i)	12'00	6'00	—	2'75	7'00	{ 4'00, 6'00 & 8'00 }	10'89	
	FOREIGN LINE.								
LX.	West of India Portuguese - - -	12'00	6'00	—	2'50	7'89	5'17	9'80	

(a) Vide remarks (b) and (u) on page 157.

(b) This rate applies to consignments weighing 160 maunds or 5'88 tons and over.

(c) Including the Guntakal-Mysore Frontier, the Southern Mahratta (Mysore section), the Kolhapur, the Yesvantpur-Mysore Frontier, and the Mysore Nanjangud Railways.

(d) In force on the Poona-Londa and Guntakal-Castle Rock sections only.

(e) Including the Pondicherry Railway.

No. 31—concluded.

METRE GAUGE RAILWAYS on the 31st December 1893—concluded.

English money at 1s. 4d. to the rupee by taking one pie = 0·083d.)

Rates.										Railways.	Serial Number.
Class.	2nd Class.		3rd Class.		4th Class.		5th Class.				
Per Maund per Mile.	Per Ton per Mile.	Per Maund per Mile.	Per Ton per Mile.	Per Maund per Mile.	Per Ton per Mile.	Per Maund per Mile.	Per Ton per Mile.	Per Maund per Mile.			
Pies.	Pies.	Pies.	Pies.	Pies.	Pies.	Pies.	Pies.	Pies.	Pies.		
Metre Gauge.											
STATE LINES WORKED BY COMPANIES.											
Bengal and North-Western—											XXXIII.
0'33	13'61	0'50	18'15	0'67	22'68	0'83	27'22	1'00	Tirhoot section.		
0'33	13'61	0'50	18'15	0'67	22'68	0'83	27'22	1'00	Company's section.		
0'35	14'29	0'53	19'05	0'70	23'14	0'85	27'22	1'00	Rohilkund and Kumaon (Lucknow-Bareilly section).	XXXIV.	
0'35	14'29	0'53	19'05	0'70	23'14	0'85	27'22	1'00	Rajputana-Malwa - - -	XXXV.	
0'33	13'61	0'50	18'15	0'67	22'68	0'83	27'22	1'00	Palanpur-Deesa - - -	XXXVI.	
0'33	13'61	0'50	18'15	0'67	22'68	0'83	27'22	1'00	Southern Mahratta (c) - -	XXXVII.	
0'33	13'61	0'50	18'15	0'67	22'68	0'83	27'22	1'00	South Indian (e) - - -	XL.	
STATE LINES WORKED BY THE STATE.											
Eastern Bengal (State)—											XLIII.
0'33	13'61	0'50	18'15	0'67	22'68	0'83	27'22	1'00	Northern and Behar sections (including the Kaunia-Dharla, 2' 6" gauge, branch).		
0'33	13'61	0'50	18'15	0'67	22'68	0'83	27'22	1'00	Dacca section.		
0'34	13'88	0'51	18'51	0'68	22'86	0'84	27'49	1'01	Burma (State) (f) - - -	XLIV.	
ASSISTED COMPANIES.											
—	—	—	—	—	—	—	—	—	Deoghur - - - - -	XLVI.	
0'33	12'52	0'46	18'78	0'69	28'04	1'03	54'44	2'00	Rohilkund and Kumaon (Company's section).	XLVII.	
charged. There are no classified rates in force on this railway.											
1'00	54'44	2'00	81'66	3'00	—	—	—	—	Bengal Dooars - - - -	XLVIII.	
—	—	—	—	—	—	—	—	—	Dibru-Sadiya - - - -	XLIX.	
LINE OWNED BY NATIVE STATE AND WORKED BY COMPANY.											
0'35	14'29	0'53	19'05	0'70	23'14	0'85	27'22	1'00	The Gaekwar's Mehsana -	LI.	
LINES OWNED AND WORKED BY NATIVE STATES.											
Jodhpore-Bickaneer—											LV.
0'50	20'42	0'75	25'86	0'95	31'30	1'15	36'75	1'35	Jodhpore section.		
									Bickaneer section.		
0'40	16'33	0'60	21'78	0'80	27'22	1'00	32'66	1'20	Bhavnagar - Gondal - Junagarh-Porbandar. (d)	LVI.	
FOREIGN LINE.											
0'36	13'88	0'51	23'63	0'87	33'75	1'24	47'91	1'76	West of India Portuguese -	LX.	

(f) The standard weight on this railway is the viss, one ton being equal to 613·69 viss, and one maund to 22·5 viss.

(g) First 100 miles, 10·89 pies per ton per mile.

Over 100 miles, 8·17

(h) Per waggon load - { under 100 miles - 0 4 0 a waggon.

{ over 100 " - 0 3 0 " "

(i) Including the Jetalpur-Rajkot Railway.

N.B.—The rates under column "Per ton per mile" have, as far as possible, been calculated from the actual rates in force.

CHAPTER X.

FUEL CONSUMPTION.

The total quantity of fuel consumed on the standard and metre gauge railways during 1893 compares with the previous year as follows :—

Years.	Coal.			Coke.	Patent Fuel.	Wood.
	English.	Indian.	Total.			
*Previous year	Tons. 204,367	Tons. 866,142	Tons. 1,070,509	Tons. 9,498	Tons. 4,139	Tons. 302,840
1893	178,656	919,943	1,098,599	4,957	6,135	358,756

2. The total consumption of coal during 1893 was 2·62 per cent. greater than in 1892. The quantity of English coal used was 12·58 per cent. less, and that of Indian coal 6·21 per cent. more. The total consumption of coke decreased by 48·22 per cent., while the consumption of patent fuel and wood increased by 48·22 and 18·46 per cent. respectively.

3. Particulars regarding the description of fuel in use on the principal lines are given in the following paragraphs. The average cost per ton, the consumption per train-mile and per thousand gross ton-miles, stated in terms of Bengal (Kurhurbaree) coal, will be found in Statement No. 32 on page 169.

The equivalents employed for converting English coal and patent fuel into terms of Bengal coal were, where others had not been arrived at experimentally, the same as those given in last year's report, viz. :—

Patent fuel	-	-	-	-	·80
English coal	-	-	-	-	·90
Bengal coal	-	-	-	-	1·00

The subject of fuel equivalents is receiving increased consideration, and further experiments have been carried out with particular classes of fuel. It is hoped that the importance of the subject in its bearing on economy of consumption will lead to more extended trials on a sufficient scale to give thoroughly reliable results.

The table on page 168 shows the equivalent of one ton of Kurhurbaree coal in terms of other descriptions of fuel as used by some of the principal railways.

EAST INDIAN RAILWAY (STANDARD GAUGE).

4. The entire supply of fuel used on the East Indian Railway and its branches was obtained from the East Indian Railway collieries at Kurhurbaree and Serampore.

The issue price of coal for the first half-year was Rs. 1-12-0 per ton and for the second half-year Rs. 1-14-0 per ton. Coke mixed with coal was used only for shunting and pumping engines. The issue price of the mixture was Rs. 2-8-0 per ton throughout the year. These prices are for coal and coke delivered into waggons at the collieries.

EASTERN BENGAL (STATE) RAILWAY SYSTEM (STANDARD, METRE, AND SPECIAL GAUGES.)

5. The coal used on the different sections of the railway system was chiefly obtained from the following sources :

On the Eastern (Calcutta to Goalundo and branches), Southern (Calcutta to Port Canning, and branches), and Central (Dum-Dum to Khoolna and Ránaghat to Bongong) sections.	Barákar coal, at Rs. 3-2-0 per ton, delivered into waggons at Barákar. Gourangdih coal (balance of previous year's contract), at Rs. 2-8-0 per ton, delivered into waggons at Gourangdih colliery.
---	---

On the Northern (Sára Ghât to Siliguri and branches), Behar (Manihári to Dinagepore and branches), and Kaunia-Dharlla sections.

Barákar coal, at Rs. 3-4-0 per ton, delivered into waggons at Barákar.

On the Dacca (Naráyanganj to Mymensingh) section.

Assam coal (balance of previous year's supply), at Rs. 14 per ton, delivered into waggons at Náráyanganj.

The actual quantities of the different descriptions of coal used were—

	Tons.
Bengal coal - - - - -	65,128
Assam coal - - - - -	2,252
Bengal Dooars coal - - - - -	87

ODDH AND ROHILKHAND (STATE) RAILWAY (STANDARD GAUGE).

6. The coal used during the year on all sections of the line was obtained from the following sources:—

Kurhurbaree coal, at Rs. 3-4-0 per ton, from January to March 1893, and at Rs. 3 per ton from April to December 1893, delivered into waggons at Girdih.

Sodepore coal, at Rs. 3-4-0 per ton, delivered into waggons at Girdih.

Rubble coal, at Rs. 2-12-0 per ton, delivered into waggons at Girdih.

The Kurhurbaree coal supplied under the contracts was of good quality, but the arrangements for delivery were not entirely satisfactory. On the 31st December a balance of 4,288 tons of steam coal remained to be supplied by the coal company on orders from April to December 1893.

Rubble was substituted for steam coal with very unsatisfactory results during the three months of the contract, owing to temporary inability of the Bengal Coal Company to supply steam coal.

NORTH-WESTERN (STATE) RAILWAY SYSTEM (STANDARD GAUGE).

7. The fuel used on the different sections of the railway system was obtained principally from the following sources:—

Between Lahore and Gháziabad and between Lahore and Pesháwar, excluding the Khusálgarh branch. Also for a short time on mail trains running between Lahore and Montgomery after the discontinuance of wood.

Kurhurbaree coal, at Rs. 3-4-0 per ton, delivered into waggons at Girdih.

Madancotta coal, at Rs. 3 per ton, delivered into waggons at Madhupur.

Rubble coal, at Rs. 2-12-0 per ton, delivered into waggons at Girdih.

Gourangdih coal, at Rs. 2-4-0 per ton, delivered into waggons at Sitarámpur.

Barákar coal, at Rs. 2-15-0 per ton, delivered into waggons at Barákar station.

Throughout the Sind-Sagar district and between Lahore and Phillour and Lahore and Montgomery. Also occasionally between Phillour and Bhátinda, as also between Ráwalpindi and Pesháwar and the Khusálgarh branch. Throughout the Frontier district, and occasionally between Jacobabad, Sukkur, and Dádú.

Dandot coal supplied from the Khewra and Bhaganwalla collieries at Rs. 9 per ton, and delivered into waggons at Kalapani and Haranpur stations.

Khost coal supplied from the Khost and Sharigh collieries at Rs. 15, and subsequently at Rs. 16 per ton, delivered into waggons at Khost and Sharigh stations respectively.

Constantly between Kurrachee and Kotri; also in the Frontier district, and occasionally from Kotri to Dádú during scarcity of wood.

English coal delivered into waggons at Kurrachee at an average rate of Rs. 21 per ton.

Between Montgomery and Kotri, including the Hyderabad-Umarkot Railway, and for a short time between Lahore and Montgomery and branches when supply of wood was sufficient.

Firewood from the Baháwalpur State supplied at different stations between Reti and Samásata at Rs. 45 and Rs. 46 per 1,000 cubic feet.

Firewood from Punjab forests supplied at different stations between Lahore and Mooltan at Rs. 50 to Rs. 56-10-8 per 1,000 cubic feet.

Firewood from the Sind forests supplied at different stations between Reti and Kotri, including Ruk to Jacobabad, at an average rate of Rs. 40 per 1,000 cubic feet.

The supply of wood fuel in the Punjab appears to be gradually diminishing, and it is probable that country coal from the salt range or from Bengal will soon have to be substituted.

The actual quantities of the different descriptions of fuel used were :—

	Tons.
Bengal coal	65,335
English coal	21,322
Khost coal	10,300
Dandot coal	51,220
Patent fuel	765
Firewood in terms of Kurhurbaree coal	63,228

INDIAN MIDLAND RAILWAY (STANDARD GAUGE).

8. The bulk of the coal consumed on the railway was supplied by the Umaria colliery, at Rs. 4-3-0 per ton, delivered into waggons at the colliery. A small quantity of Borea coal, purchased in the previous year at Rs. 3-4-0 per ton, delivered into waggons at Sítarámpur, was also consumed during the year.

The actual quantities of the different descriptions of fuel used during the year were :—

	Tons.
Umaria coal	40,177
Borea coal	100
Firewood in terms of Kurhurbaree coal	372

BENGAL NÁGPUR RAILWAY (STANDARD GAUGE).

9. The coal used during the year on the different sections was obtained from the following sources :—

On the main line (from Ásansol to Nágpur) and on the section Jharsuguda to Sambalbur and Biláspur to Sadhol. { Bengal steam coal, at Rs. 2-14-0 per ton, delivered into waggons at Sanctoria, and 696 tons of Damoodur coal, at Rs. 2-10-0 per ton, delivered into waggons at the colliery branch.

On the section (Sahdol to Katni).

{ Umaria coal supplied from the Umaria collieries, at Rs. 5-8-0 per ton, from January to June 1893, and at Rs. 4-3-0 per ton from July to December 1893, delivered into waggons at the pit's mouth, Umaria. 126 tons of Bengal steam coal was also obtained at 2-14-0 per ton, delivered into waggons at Sanctoria, for trial in comparison with Umaria coal.

The coal supplied under the above contracts was of good quality, and the arrangements for delivery satisfactory.

The quantities of the different descriptions of fuel used during the year were—

	Tons.
Bengal coal	33,741
Umaria coal	2,784

GREAT INDIAN PENINSULA RAILWAY SYSTEM (STANDARD GAUGE).

10. The descriptions of coal used during the year on the different sections of the railway system are shown below :—

On the Konkan district (Bombay to Karjat and Bombay to Kására).	English, Umaria, Umaria washed nuts, Singareni screened, Singareni unscreened, Raneegunge, Sítarámpur, Barákar, Japanese, and Deshergarh.
On the Bhore Ghât (Karjat to Lonávla)	English, Singareni screened, and Singareni unscreened.
On the Thull Ghât (Kására to Igatpuri)	English and Raneegunge.
On the south-east line (Lonávla to Sháhábád).	English, Umaria, Umaria unwashed nuts, Singareni screened, and Singareni unscreened.
On the Dhond-Manmád section	English, Umaria washed nuts, Singareni screened, and Singareni unscreened.
On the north-east line (Igatpuri to Nándgaon).	English, Nerbudda, and Umaria washed nuts.
On the north-east line (Nándgaon to Bhusával).	English, Umaria, Warora, and Sanctoria.
On the north-east line (Bhusával to Khandwa).	Umaria, Umaria washed nuts, Warora and Sanctoria.
On the north-east line (Khandwa to Jubbulpore).	Nerbudda, Umaria, and Umaria washed nuts.
On the Nágpur-Bhusával section	Warora, Damoodur, Deshergarh, and Sanctoria.
On the Wardha-Warora section	Warora.
On the Khámgaon section	Warora and Sanctoria.
On the Amráoti section	Warora and Sanctoria.

The rates at which the different descriptions of coal was purchased and the places of delivery are given below :—

Description of Coal.	Rate per Ton.	Place of Delivery.
	R. A. P.	
Raneegunge	12 12 0	} Purchasers' boats at Bombay.
Sítarámpur	12 8 0	
Barákar	12 8 0	
Deshergarh	12 8 0	
Japanese	12 0 0	
Singareni, screened	6 0 0	} Into waggons at Yellandu.
Singareni, unscreened	4 8 0	
Mohpáni	8 6 0	Into waggons at Mohpáni.
Warora	4 8 0	Into waggons at pit's mouth.
Sanctoria	3 0 0	—
Umaria	5 8 0	Into waggons at Umaria during January to June 1893.
	4 3 0	Into waggons at Umaria during July to December 1893.
Umaria washed nuts	2 12 0	Into waggons at Umaria during January to August 1893.
	2 4 0	Into waggons at Umaria during September to December 1893.
Damoodur	3 0 0	Into waggons at Damoodur.
Deshergarh	3 0 0	Into waggons at Deshergarh.

The actual quantities of the different descriptions of fuel used during the year were :—

	Tons.
English coal	67,857
Warora coal	58,870
Umaria coal	25,233
Mohpani coal	9,965
Singareni screened coal	39,113
Singareni unscreened coal	5,464
Bengal	21,027
Japanese coal	95
Firewood in terms of Kurhurbaree coal	807

BOMBAY, BARODA, AND CENTRAL INDIA RAILWAY (STANDARD GAUGE).

11. The fuel used in locomotives was almost entirely English coal. The actual quantities* of the different descriptions used during the year were :—

	Tons.
English coal	44,917
Bengal coal	673
Firewood in terms of Kurhurbaree coal	476

The average prices per ton of English and Bengal coal were respectively Rs. 13-8-10 and Rs. 14-11-11.

MADRAS RAILWAY (STANDARD GAUGE).

12. The fuel used on the different sections of the railway during the year and the sources from which they were obtained, as also the rates paid for them on the different districts, are given in the following table :—

Section.	Description of Fuel used.	Remarks as to Source of Supply, Rate, &c.
Madras-Jalarpet and Madras-Rénigunta Jalarpet-Bangalore and Jalarpet-Calicut Rénigunta-Cuddapah Cuddapah-Raichúr	Coal on mail and passenger engines; coal and wood on goods engines. Firewood Coal.	Coal was obtained from the Singareni mines at a cost of Rs. 13-12-0 per ton, delivered at Madras, and Rs. 14-4-0 delivered at Raichúr. Firewood was obtained from Government and private forests along the line of railway at rates per ton varying from Rs. 3-6-0 to Rs. 5-14-0 on the Jalarpet-Bangalore and Jalarpet-Calicut sections, and Rs. 5 to Rs. 5-12-0 on the Rénigunta-Cuddapah section. A small quantity of Casuarina firewood at Rs. 7 per ton was also burnt.

The actual quantities of the different descriptions of fuel used during the year were :—

	Tons.
Singareni coal	19,242
Barákar coal	2,251
Patent fuel	997
Firewood in terms of Kurhurbaree coal	34,301

THE NIZAM'S GUARANTEED (STATE) RAILWAY SYSTEM (STANDARD GAUGE).

13. Singareni coal was used throughout the line at an average cost of Rs. 5-2-1 per ton.

EAST COAST (STATE) RAILWAY (STANDARD GAUGE).

14. Singareni coal was used on the section of this railway which was worked by state agency. Unscreened Singareni coal was obtained at Rs. 12-4-0 per ton delivered at Vizagapatam and Cocánada, Rs. 0-8-0 being paid per ton for cart hire to the railway

* Including consumption of fuel on the Godhra-Kutlam and the Gaekwar's Petlád Railways.

yard. This description of coal was also obtained at Rs. 4-8-0 per ton delivered into waggons at Yellandu; Rs. 5-10-9 per ton was paid for freight to Kovvúr, and Rs. 0-10-0 per ton for crossing the Godávári, thus bringing the aggregate to Rs. 10-12-9 per ton.

Singareni steam and nut coal mixed in equal quantities was supplied at Rs. 7-8-0 per ton delivered at Rajahmundry.

BENGAL AND NORTH-WESTERN RAILWAY (METRE GAUGE).

15. Kurhurbaree coal was used during the year. It was obtained from the Bengal Coal Company at a cost of Rs. 3-2-0 per ton delivered into waggons at Giridih.

Wood fuel obtained from the Government forests was used on the section west of Gorakhpur and on the Uska branch, and in the districts of Gonda and Bahraich on the main line.

The actual quantities of the different descriptions of fuel used were:—

	Tons.
Kurhurbaree coal - - - - -	20,553
Firewood in terms of Kurhurbaree coal - - - - -	1,924

RAJPUTANA-MALWA RAILWAY (METRE GAUGE).

16. English coal was used on the Ajmere-Sábarmati and Ajmere-Khandwa sections, and Bengal coal on the remaining portion of the railway. Firewood and unserviceable sleepers were used over the whole line for lighting up engines.

Bengal coal was delivered at Agra and Cawnpore at an average rate of Rs. 15-8-0 and Rs. 13-2-4 per ton respectively, and English coal was delivered at Sábarmati and Khandwa at an average rate of Rs. 23 and Rs. 26-9-0 per ton respectively. Firewood was purchased locally at an average rate of Rs. 8-13-0 per 100 cubic feet, and unserviceable sleepers, fit for fuel, was supplied by the engineering department at Rs. 5 per 100 cubic feet.

The actual quantities of the different descriptions of fuel used were:—

Bengal coal - - - - -	51,429
English coal - - - - -	35,538
Firewood in terms of Kurhurbaree coal - - - - -	576

JOHDPORE-BICKANEER RAILWAY (METRE GAUGE).

17. The coal used on this railway was obtained from Giridih at a cost of Rs. 26-2-6 per ton.

BHÁVNAGAR-GONDAL-JUNÁGARH-PORBANDAR RAILWAY (METRE GAUGE).

18. The coal used during the year was Cardiff (Powell Duffryn) for locomotive purposes and West Hartley for workshop purposes.

About 6,000 tons of Cardiff (Powell Duffryn) and 500 tons West Hartley coal was purchased during the year at Rs. 21-10-0 per ton.

SOUTHERN MAHRATTA RAILWAY SYSTEM (METRE GAUGE).

19. The fuel used during the year on the different sections of the Southern Mahratta railway system was obtained from the following sources:—

On the Poona branch (Poona to Londa).	} Kánara firewood, at Rs. 4-4-0 per ton, stacked at Nágargáli, Devarayi, Londa, and Gunji stations.
On the Kolhápúr-Miraj section.	
On the main line (Castle Rock to Gadag).	
On the Harihar branch (Hubli to Harihar).	
On the Harihar-Shivani section.	} Mysore firewood at an average rate of Rs. 7-1-2 per ton, stacked at Arsikere, Bidadi, Closepet, Channapatna, Mudgere, and Bangalore.
On the Shivani-Nanjangúd section.	

On the main line (Gadag to Kistna Canal terminus).
 On the Guntakal-Bangalore section.
 On the Bijápur branch (Hotgi to Gadag).

Singareni coal, at Rs. 6 per ton, delivered into waggons at the colliery (Yellandu).

The fuel supplied under all contracts has been of fair quality, though the firewood obtained on the Mysore section was not equal to that supplied from the Kanara forests. Supplies in the Mysore State were sometimes irregular, owing chiefly, it is understood, to the distance of forests from the railway. The use of wood fuel on the Mysore section was abandoned and Singareni coal substituted from January 1894.

The actual quantities of the different descriptions of fuel consumed were:—

	Tons.
English coal	136
Singareni coal	18,398
Firewood in terms of Kurhurbaree coal	29,601

SOUTH INDIAN RAILWAY (METRE GAUGE).

20. The coal used during the year on the different sections was obtained from the following sources:—

Throughout the system, with the exception of the Pákala-Dharmavaram and Nellore-Tirupati sections.

Borea coal from Sítarámpur colliery, and delivered at the ports of Tuticorin and Negapatam at Rs. 14-4-0, Cuddalore, Rs. 13-8-0, and Madras, Rs. 15-4-0 per ton.

On the northern and southern sections (Trichinopoly to Villupuram, including the Negapatam and Erode branches, and Pákala to Nellore).

Deshergarh coal delivered at the port of Cuddalore at Rs. 15; Negapatam, Rs. 16; and Tuticorin, Rs. 18 per ton.

On the northern section (Dharmavaram to Pákala and Nellore to Tirupati).

Singareni coal delivered at Dharmavaram and Pákala depôts at Rs. 17-4-0 per ton.

On the southern section (Cuddalore to Tuticorin, Negapatam and Erode branches).

Barákar coal delivered at the ports of Cuddalore and Negapatam at Rs. 16 and Tuticorin at Rs. 17-8-0 per ton.

On the northern section (Madras to Lhingleput).

Australian Greta coal delivered at Madras at Rs. 18 per ton.

On the northern section (Chingleput to Arkonam).

English coal delivered in Madras, at Rs. 18 per ton.

On the southern section (Negapatam to Trichinopoly).

Sanctoria coal delivered at Negapatam port at Rs. 15-7-0 per ton.

The arrangements for the delivery of the coals were satisfactorily carried out.

The quantities of the different descriptions of fuel used were:—

	Tons.
Bengal coal	33,868
Singareni coal	6,651
Australian coal	952
English coal	79
Firewood, in terms of Kurhurbaree coal	18,381

BURMA (STATE) RAILWAY (METRE GAUGE).

21. The fuel used during the year was as follows:—

Bengal coal of various kinds, at an average cost of Rs. 12-4-5 per ton, delivered at Rangoon. Thingadaw (Burma) coal, at Rs. 12-8-0 per ton, delivered at Mandalay.

Firewood, at an average cost of Rs. 4-5-9 per 100 cubic feet, delivered at various depôts in Upper Burma.

From January 1893 to the end of January 1894, 5,027 tons of Thingadaw coal were delivered, and under instructions from the Government of India, trials of this coal in comparison with other coals are now being made.

The actual quantities of the different description of fuel used were :—

	Tons.
Bengal coal - - - - -	14,003
Thingadaw coal - - - - -	4,611
English coal - - - - -	7
Patent fuel - - - - -	4,374
Firewood in terms of Kurhurbaree coal - - - - -	6,377

STATEMENT No. 32.

PARTICULARS of FUEL CONSUMPTION on the PRINCIPAL RAILWAYS during 1892.

Serial Number.	Railway.	Description of Fuel.	Total actual quantity consumed in terms of coal.	Average Cost per Ton.	Cost per Train-mile.	Consumption stated in (a) terms of Kurhurbaree Coal.			Average lead.
						Total quantity consumed.	Consumption per Train-mile.	Consumption per 1,000 gross Ton-miles.	
			Tons.	Rs.	As.	Tons.	Lbs.	Lbs.	Miles.
I.	East Indian - - -	Bengal coal - - -	232,031	1'86	0'71	232,031	53'54	146'50	249'00
II.	Bengal-Nágpur - - -	Bengal and Umaria coal, but principally Bengal coal.	36,526	3'18	1'22	32,862	48'26	132'26	Bengal 294'89. Umaria 5'08.
III.	Indian Midland - - -	Bengal and Umaria coal and wood, but principally Umaria coal.	40,649	8'62	3'85	32,614	50'14	161'50	Umaria to Itarsi 249'00. Umaria to Manikpur 149'00. Bengal to Manikpur 480'00.
IX.	North-Western (State) (b) -	English, Bengal, Khost, and Dandot coal; also patent fuel and wood.	212,170	12'98	4'89	197,726	49'17	155'22	Bengal 255'00. English 207'00. Dandot 140'00. Khost 154'00. Wood 50'00.
XI.	Oudh and Rohilkhand (State)	Bengal coal - - -	47,384	9'09	2'62	47,384	40'35	135'46	519'00
XII.	Eastern Bengal (State) (c) -	Bengal coal - - -	45,592	6'02	2'29	42,175	49'26	183'52	123'24
XV.	East Coast (State) - - -	Singareni coal - - -	3,943	10'50	3'80	3,866	49'64	270'04	129'51
XVIII.	Great Indian Peninsula (b) -	English, Warora, Umaria, Bengal, Mohpani, Japan, and Singareni coal and wood, but principally English and Warora coal.	228,431	10'01	3'70	190,639	43'16	149'56	*
XIX.	Bombay, Baroda and Central India, (b)	English and Bengal coal and wood, but principally English coal.	46,066	13'58	'01	50,949	45'78	127'13	English 126'17. Bengal 6'00. Firewood 46'79.
XX.	Madras - - -	Bengal and Singareni coal and wood, also patent fuel, but principally wood.	(e) 141,626	5'16	4'43	56,858	48'19	173'57	Bengal and Singareni 39'72. Wood 17'01. Patent fuel 135'75.
XXVI.	The Nizam's Guaranteed State (b)	Singareni coal - - -	16,497	5'13	2'00	14,729	48'64	154'75	118'00
XXXIII.	Bengal and North-Western—Tirhoot section - - - } Company's section - - - }	Bengal coal and wood, but principally Bengal coal.	22,477	6'97	1'54	22,477	30'86	152'61	Bengal 125'00. Wood 17'00.
XXXV.	Rajputana Malwa (b) - - -	English and Bengal coal, but principally Bengal coal.	87,543	18'19	3'82	91,492	30'73	148'51	English 513'00. Country 807'00.
XXXVII.	Southern Mahratta (b) - - -	(e) English and Singareni coal and wood, but principally wood.	120,066	4'85	2'95	46,179	34'16	205'15	Coal 190'00. Wood 120'00.
XL.	South Indian - - -	English, Australian, Singareni, and Bengal coal and wood, but principally Bengal coal.	59,931	12'35	3'70	64,193	44'94	286'82	Coal 96'55. Wood 49'13.
XLIII.	Eastern Bengal (State)—Northern and Behar sections (including the Kaunia-Dharila gauge branch). 2' 6" Dacca section - - -	Bengal coal - - -	19,436	6'26	1'49	18,560	31'88	(f) 190'05	233'00
		Bengal and Assam coal; chiefly Assam coal.	2,439	13'22	2'92	2,547	32'29	(g)	—
XLIV.	Burma (State) - - -	English and Bengal coal, patent fuel, and wood, but principally Bengal coal.	29,372	14'32	3'47	28,215	32'58	157'54	(d)
LV.	Jodhpore-Bickaneer—Jodhpore Section - - -	Bengal coal - - -	3,354	26'16	4'87	3,354	26'06	(d)	968'00
	Bickaneer Section - - -	Bengal coal - - -	364	26'18	4'74	364	25'38	(d)	
LVI.	Bhánagar-Gondal-Junágarh-Porbandar.	English coal and wood - - -	5,898	21'88	3'44	6,548	24'44	153'68	Bhánagar-Gondal-Junágarh-Porbandar Railway 102'76, and Jetalsar-Rájkot Railway 46'23.

(a) See paragraph 3 of this chapter.
(b) Including branch lines worked.(c) Including the Bengal Central Railway.
(d) Information not furnished.
(e) Expressed in terms of wood.(f) Including the Dacca section.
(g) Included in Northern and Behar sections.* English 69'60.
Warora 169'40.
Umaria 235'10.
Mohpani 143'10.Singareni screened } 429'50.
Singareni unscreened }
Damoodur 730'00.
Desherghar 728'30.
Sanctoria 775'30.Raneesgunge 7'90.
Sitarampur } 1'00.
Barákar }
Japanese 1'00.

CHAPTER XI.

PERSONS EMPLOYED.

Numbers employed.—Statement No. 33 on pages 172 and 173 gives detailed information regarding the number of persons of all races employed on the standard and metre gauge railways open for traffic. The following is a summary of the figures:—

Year ending.	Number of Employés.				Number of Miles open.	Number of Stations.
	Europeans.	East Indians.	Natives.	Total.		
STANDARD GAUGE.						
Previous year (a) - - -	3,569	3,606	186,212	193,387	10,344·65	1,461
31st December 1893 (b) - -	3,618	3,716	190,649	197,983	10,513·01	1,511
METRE GAUGE.						
Previous year (c) - - -	938	2,201	62,234	65,373	6,712·25	986
31st December 1893 (d) - -	979	2,222	64,963	68,164	6,976·44	1,004

Natives as usual formed the largest percentage of the entire body of servants. Under Europeans there was an increase of 1·37 per cent. on the standard gauge lines and of 4·37 per cent. on the metre gauge. East Indians show an increase of 3·05 per cent. on the standard gauge and of 0·95 per cent. on the metre gauge; while Natives show an increase of 2·38 per cent. on the standard gauge and of 4·38 per cent. on the metre gauge.

2. *Casualties.*—The percentage of casualties amongst Europeans and East Indians from various causes as compared with the previous year is given below:—

	1892.				1893.			
	Europeans.		East Indians.		Europeans.		East Indians.	
	Standard Gauge.	Metre Gauge.	Standard Gauge.	Metre Gauge.	Standard Gauge.	Metre Gauge.	Standard Gauge.	Metre Gauge.
Death - - -	2·35	1·07	1·03	1·00	1·33	1·33	0·59	0·86
Resignation and discharge -	13·20	12·58	15·70	16·40	10·64	12·26	12·46	12·47
Dismissal - - -	2·83	2·67	4·35	5·09	2·29	2·45	2·34	3·82
Total - - -	18·38	16·32	21·08	22·49	14·26	16·04	15·39	17·15

(a) Excluding the Calcutta Port Commissioners' and the Nizam's Guaranteed State Railways.

(b) Excluding the East Coast (State) and the Nizam's Guaranteed State Railways, but including the metre gauge section of the Eastern Bengal (State) Railway.

(c) Excludes the West of India Portuguese Railway.

(d) Excluding the Bengal Doocars and the West of India Portuguese Railways.

STATEMENT No. 33.

NUMERICAL RETURN of SERVANTS OF ALL RACES employed on the STANDARD and METRE
GAUGE RAILWAYS (open lines only) on the 31st December 1893.

STATEMENT

NUMERICAL RETURN of SERVANTS of all RACES employed on the STANDARD and

Serial Number.	Railway.	General Administration, including Agency, Audit, Accounts, Paymaster's, Stores, Medical, Barrack, Printing, Stationery, and Police Establishments.				Traffic and Telegraph Departments.				Engineer's Department.					
		Europeans.	East Indians.	Natives.	Total.	Europeans.	East Indians.	Natives.	Total.	Europeans.	East Indians.	Natives.	Total.		
Standard Gauge.															
STATE LINES WORKED BY COMPANIES.															
I.	East Indian (a) - - -	68	25	2,522	2,615	375	244	10,510	11,129	69	35	16,905	17,009		
II.	Bengal-Nágpur - - -	13	32	544	589	33	57	1,301	1,391	22	27	8,033	8,082		
III.	Indian Midland (b) - - -	24	23	433	480	42	52	1,404	1,498	25	5	3,900	3,980		
STATE LINES WORKED BY THE STATE.															
IX.	North-Western (State) (c) - -	27	18	1,852	1,897	241	209	8,428	8,878	105	38	20,619	20,762		
XI.	Oudh and Rohilkhand (State) -	9	38	651	698	54	52	2,347	2,453	17	23	4,098	4,138		
XII.	Eastern Bengal (State) (d) - -	19	13	966	998	82	145	4,025	4,252	25	15	5,537	5,577		
XIII.	Bengal Central - - -	2	—	8	(e) 10	Worked by the Eastern Bengal (State) Railway.				1	—	536	537		
XIV.	Calcutta Port Commissioners' -	—	—	3	3	1	13	254	268	—	—	—	—		
XV.	East Coast (State) - - -	Information not furnished.				—	—	—	—	—	—	—	—		
LINES WORKED BY GUARANTEED COMPANIES.															
XVIII.	Great Indian Peninsula (f) - -	43	41	1,331	1,415	397	302	7,469	8,168	76	30	18,029	18,135		
XIX.	Bombay, Baroda, and Central India (g)	22	35	842	899	16	14	2,592	2,622	15	—	2,792	2,807		
XX.	Madras - - -	19	49	802	870	102	466	3,581	4,149	18	109	4,545	4,672		
LINES OWNED BY NATIVE STATES AND WORKED BY COMPANIES.															
XXVI.	The Nizam's Guaranteed State (h) -	Information not furnished.				—	—	—	—	—	—	—	—		
XXVII.	The Gaekwar's Petlād - - -	—	—	—	—	—	—	36	36	—	—	48	48		
	Total Standard Gauge - - -	246	274	9,954	10,474	1,343	1,554	41,947	44,844	373	282	85,042	85,697		
Metre Gauge.															
STATE LINES WORKED BY COMPANIES.															
XXXIII.	Bengal and North-Western— Tirhoot Section - - -	13	7	571	591	28	38	1,505	1,571	10	3	2,828	2,841		
	Company's Section - - -														
XXXV.	Rajputana-Malwa (i) - - -	31	41	1,477	1,549	131	151	4,130	4,412	25	26	7,180	7,231		
XXXVII.	Southern Mahratta (j) - - -	19	54	1,047	1,120	39	158	2,872	3,069	19	33	4,976	5,028		
XL.	South Indian (k) - - -	8	25	552	585	13	98	2,854	2,965	18	31	4,215	4,264		
STATE LINE WORKED BY THE STATE.															
XLIV.	Burma (State) - - -	11	26	176	(l) 213	50	108	1,223	1,441	21	47	4,054	4,122		
ASSISTED COMPANIES.															
XLVI.	Deoghur - - -	—	—	1	1	—	—	13	13	—	—	26	26		
XLVII.	Rohilkhand - Kumaon (Company's Section) (m). - - -	5	—	142	147	8	24	662	694	3	1	882	886		
XLVIII.	Bengal Dooars - - -	Information not furnished.				—	—	—	—	—	—	—	—		
XLIX.	Dibru-Sadiya - - -	4	1	81	86	1	1	155	157	1	—	448	449		
LINES OWNED AND WORKED BY NATIVE STATES.															
LV.	Jodhpore-Bickaneer— Jodhpore Section - - -	2	—	68	70	—	1	239	240	—	—	827	827		
	Bickaneer Section - - -														
LVI.	Bhánagar - Gondal - Junágarh - Por- bandar. (o) - - -	6	2	261	269	4	8	590	602	3	4	1,274	1,281		
	Total Metre Gauge - - -	99	156	4,376	4,631	274	647	14,243	15,164	100	145	26,710	26,955		

(a) Including the Tarkessur and the Delhi-Umballa-Kalka Railways.

(b) Including the Bhopal-Itarsi Railway.

(c) Including the Hyderabad-Umarkot, the Rajpura-Bhatinda, and the Jammu and Kashmir Railways.

(d) Including the figures of the Bengal Central Railway (excluding Agency and Engineer's Departments) and of the metre gauge sections.

(e) Agency and Stores only; others included with the Eastern Bengal (State) Railway.

(f) Including the Wardha Coal, the Dhond-Mannád, and the Khámgaon and Amráoti Railways.

(g) Including the Godhra-Buldam Railway.

(h) Including the Bezvada Extension and the Bezvada-Godávári section of the East Coast Railway.

No. 33.

METRE GAUGE RAILWAYS (Open Lines only) on the 31st December 1893.

Locomotive and Carriage and Wagon Departments, including Steamboat Establishments.				Total.				Number of Miles Open. (See also Statement No. 25, pages 126 to 128.)	Number of Stations.	Railway.	Series Number.
Europeans.	East Indians.	Natives.	Total.	Europeans.	East Indians.	Natives.	Total.				
Standard Gauge.											
STATE LINES WORKED BY COMPANIES.											
309	243	11,522	12,134	881	547	41,459	42,887	1,794'36	227	East Indian (a)	I.
88	89	1,874	2,051	156	205	11,752	12,113	862'33	90	Bengal-Nágpur	II.
77	105	1,987	2,169	168	185	7,724	8,077	734'46	96	Indian Midland (b)	III.
STATE LINES WORKED BY THE STATE.											
419	279	11,917	12,615	792	544	42,816	44,152	2,608'26	345	North-Western (State) (c)	IX.
61	26	3,331	3,418	141	139	10,427	10,707	741'11	109	Oudh and Rohilkhand (State)	XI.
98	60	4,886	5,044	224	233	15,414	15,871	937'72	193	Eastern Bengal (State) (d)	XII.
Worked by the Eastern Bengal (State) Railway.				3	—	544	547	(125'01)	(26)	Bengal Central	XIII.
1	—	50	51	2	13	307	322	6'22	4	Calcutta Port Commissioners	XIV.
—	—	—	—	—	—	—	—	—	—	East Coast (State)	XV.
LINES WORKED BY GUARANTEED COMPANIES.											
354	309	11,300	11,963	870	682	38,129	39,681	3,490'08	212	Great Indian Peninsula (f)	XVIII.
103	53	2,740	2,896	156	102	8,966	9,244	485'90	91	Bombay, Baroda, and Central India (g)	XIX.
86	442	4,088	4,616	225	1,066	13,016	14,307	839'22	142	Madras	XX.
LINES OWNED BY NATIVE STATES AND WORKED BY COMPANIES.											
—	—	—	—	—	—	—	—	—	—	The Nizam's Guaranteed State (h)	XXVI.
—	—	11	11	—	—	95	95	13'35	2	The Gaekwar's Petlad	XXVII.
1,656	1,606	53,706	56,968	3,618	3,716	190,649	197,983	10,513'01	1,511	Total Standard Gauge.	
Metre Gauge.											
STATE LINES WORKED BY COMPANIES.											
83	41	2,149	2,223	84	89	7,053	7,226	756'30	126	Bengal and North-Western— { Tirhoot Section. Company's Section.	XXXIII.
257	338	6,932	7,527	444	556	19,719	20,719	1,783'93	248	Rajputana-Malwa (i)	XXXV.
74	252	2,717	3,043	151	497	11,612	12,260	1,554'87	205	Southern Mahratta (j)	XXXVII.
60	511	4,271	4,842	99	665	11,892	12,656	1,049'31	154	South Indian (k)	XL.
STATE LINE WORKED BY THE STATE.											
46	119	2,390	2,555	128	360	7,843	8,331	729'89	115	Burma (State)	XLIV.
ASSISTED COMPANIES.											
—	—	15	15	—	—	55	55	4'79	1	Deoghur	XLVI.
9	4	596	609	25	29	2,282	2,336	275'97	45	Rohilkund and Kumaon (Company's Section) (m).	XLVII.
—	—	—	—	—	—	—	—	—	—	Bengal Doars	XLVIII.
2	2	91	95	8	4	775	787	77'50	14	Dibru-Sadiya	XLIX.
LINES OWNED AND WORKED BY NATIVE STATES.											
—	(n) 2	313	315	2	3	1,447	1,452	384'00	40	Jodhpore-Bickaneer— { Jodhpore Section. Bickaneer Section.	LIII.
25	5	160	190	38	19	2,285	2,342	379'88	56	Bhávnaagar - Gondal - Junágarh - Por- bandar. (o)	LVI.
506	1,274	19,634	21,414	979	2,222	64,963	68,164	6,976'44	1,004	Total Metre Gauge.	

(i) Including the Gaekwar's Mehsana and the Palanpur-Deesa Railways.

(j) Including the Guntakal-Mysore Frontier, the Southern Mahratta Railway (Mysore Section), the Kolhāpur, the Yesvantpur-Mysore Frontier, and the Mysore-Nanjangud Railways.

(k) Including the Pondicherry Railway.

(l) Excluding Police, which is under the control of the Inspector-General of Police, Burma.

(m) Including the Rohilkund and Kumaon (Lucknow-Bareilly section).

(n) Including one West Indian.

(o) Including the Jetalsar-Rajkot Railway.

NOTE.—The figures entered within parentheses are not included in the total.

NUMERICAL RETURN of CASUALTIES, whether by Death, Resignation and Discharge, or Dismissal, amongst the EUROPEAN and EAST INDIA COMPANY'S SERVED IN THE AFFAIRS OF THE PUNJAB, 1845-1849.

Serial Number	Railway.	General Administration, including Agency, Audit, Accounts, Paymaster's Stores, Medical, Barrack, Printing, Stationery, and Police Establishments.										Traffic and Telegraph Departments.										Engineers.				
		Europeans.					East Indians.					Europeans.					East Indians.					Europeans.				
		Average Number employed.	Number of Casualties by				Average Number employed.	Number of Casualties by				Average Number employed.	Number of Casualties by				Average Number employed.	Number of Casualties by				Average Number employed.	Number of Casualties by			
			Death.	Resignation and Discharge.	Dismissal.	Total.		Death.	Resignation and Discharge.	Dismissal.	Total.		Death.	Resignation and Discharge.	Dismissal.	Total.		Death.	Resignation and Discharge.	Dismissal.	Total.		Death.	Resignation and Discharge.	Dismissal.	Total.
I.	Standard Gauge. STATE LINES WORKED BY COMPANIES. East Indian (a) - - - - -	66'11	1	6	-	7	25'29	1	3	-	4	365'20	4	37	5	46	225'30	-	30	3	33	65'67	2	5	-	
II.	Bengal-Nagpur - - - - -	13'00	1	-	1	2	31'00	-	9	1	10	30'00	4	10	3	17	48'00	-	17	9	26	19'66	1	7	-	
III.	Indian Midland (b) - - - - -	19'41	1	-	-	1	24'32	-	3	1	4	32'25	-	5	-	5	43'50	-	8	1	9	23'96	-	1	1	
	STATE LINES WORKED BY THE STATE.																									
IX.	North-Western (State) (c) - - - - -	31'08	-	4	-	4	15'25	-	3	-	3	260'58	4	55	27	86	206'33	1	31	22	54	98'67	2	10	2	
XI.	Oudh and Rohilkhand (State) - - - - -	9'08	-	3	2	5	34'08	-	7	-	7	55'25	-	10	2	12	53'02	-	6	3	9	17'00	-	-	-	
XII.	Eastern Bengal (State) (d) - - - - -	18'58	-	-	-	-	12'90	-	-	-	-	97'75	-	23	2	25	125'75	1	49	3	53	23'23	-	3	-	
XIII.	Bengal Central - - - - -	2'00	-	-	-	-	-	-	-	-	-	Worked by the Eastern Bengal State Railway.										1'75	-	1	-	
XIV.	Calcutta Port Commissioners - - - - -	-	-	-	-	-	-	-	-	-	-	1'00	-	-	-	-	11'08	-	1	-	1	-	-	-	-	
XV.	East Coast (State) - - - - -	Information not furnished.										-	-	-	-	-	-	-	-	-	-	-	-	-	-	
	LINES WORKED BY GUARANTEED COMPANIES.																									
XVIII.	Great Indian Peninsula (e) - - - - -	41'00	-	4	-	4	40'00	-	1	-	1	397'00	3	19	3	25	302'00	1	12	2	15	76'00	1	2	-	
XIX.	Bombay, Baroda, and Central India (f) - - - - -	22'00	-	1	-	1	33'00	-	4	-	4	15'00	-	-	-	-	16'00	-	2	-	2	15'00	-	-	-	
XX.	Madras - - - - -	19'08	1	2	1	4	49'08	-	12	3	15	95'42	-	7	1	8	448'75	3	50	17	70	18'00	-	2	-	
	LINES OWNED BY NATIVE STATES AND WORKED BY COMPANIES.																									
XXVI.	The Nizam s Guaranteed State (g) - - - - -	Information not furnished.										-	-	-	-	-	-	-	-	-	-	-	-	-	-	
XXVII.	The Gaekwar's Petlad - - - - -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
	Total Standard Gauge - - - - -	241'34	4	20	4	28	265'92	1	42	5	48	1,349'45	15	166	43	224	1,479'73	6	206	60	272	358'94	6	31	3	
	Metro Gauge.																									
	STATE LINES WORKED BY COMPANIES.																									
XXXIII.	Bengal and Tirhoot Section } North- - - - -	12'00	-	1	1	2	7'00	-	-	-	-	25'00	1	7	2	10	40'00	-	11	6	17	9'00	-	-	-	
XXXV.	Western - { Company's Section } Rajputana-Malwa (h) - - - - -	31'00	1	4	-	5	40'00	1	3	-	4	134'00	3	15	2	20	158'00	2	26	5	33	27'20	2	3	-	
XXXVII.	Southern Mahratta (i) - - - - -	19'00	-	2	-	2	54'00	-	7	-	7	39'00	-	-	1	1	161'00	1	16	5	22	19'00	-	1	-	
XL.	South Indian (j) - - - - -	10'00	1	1	-	2	30'00	1	4	-	5	17'00	-	6	1	7	103'00	1	20	8	29	18'09	-	3	-	
	STATE LINE WORKED BY THE STATE.																									
XLIV.	Burma (State) - - - - -	8'85	1	-	-	1	25'43	-	2	-	2	50'00	-	10	-	10	168'00	1	29	11	41	20'40	-	2	-	
	ASSISTED COMPANIES.																									
XLVI.	Deoghur - - - - -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
XLVII.	Rohilknd and Kumaon (Company's Section) (k) - - - - -	5'00	-	-	-	-	-	-	-	-	-	7'99	1	-	-	1	24'66	-	9	4	13	3'00	-	-	-	
XLVIII.	Bengal Doonars - - - - -	Information not furnished.										-	-	-	-	-	-	-	-	-	-	-	-	-	-	
XLIX.	Dibru-Sadiya - - - - -	3'59	-	-	-	-	0'58	-	1	-	1	1'00	-	-	-	-	0'83	-	1	-	1	1'00	-	-	-	
	LINES OWNED AND WORKED BY NATIVE STATES.																									
LV.	Jodhpore-Bickaneer :- Jodhpore Section - - - - - Bickaneer Section - - - - -	2'00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1'00	-	-	-	-	-	-	-	-	
LVI.	Bhavnagar-Gondal-Junagarh-Porbandar (l) - - - - -	5'00	-	-	-	-	2'00	-	-	-	-	4'00	-	-	-	-	16'00	1	7	-	8	2'66	-	-	-	
	Total Metro Gauge - - - - -	96'44	3	8	1	12	159'01	2	17	-	19	277'99	5	38	6	49	672'49	6	119	39	164	100'26	2	9	-	

(a) Including the Tarkessar, and the Delhi-Umballa-Kalka Railways.

(b) Including the Bhopal-Itarsi Railway.

(c) Including the Hyderabad-Umarkot-Rájpura-Bhátinda and the Jammu and Kashmir Railways.

(d) Including the figures for the Bengal Central Railway (excluding Agency and Engineer's Department), and of the metre gauge sections.

(e) Including the Wardha Coal, the Dhond-Manmád and the Khámgaon and Amráoti Railways.

(f) Including the Godhra-Rutlam Railway.

(g) Including the Bezwada Extension and the Bezwada-Godávári section of the East Coast Railway.

o. 34.

DIAN Employés on the STANDARD and METRE GAUGE RAILWAYS (Open Lines only) during the Year ending the 31st December 1893.

Department.	Locomotive and Carriage and Waggon Departments, including Steamboat Establishments.												Total.												Mean Mileage worked. (See also Statement No. 25, pages 126 to 128.)	Railway.		
	East Indians.				Europeans.				East Indians.				Europeans.				East Indians.											
	Average Number employed.				Number of Casualties by				Average Number employed.				Number of Casualties by				Average Number employed.				Number of Casualties by							
Death.	Resignation and Discharge.	Dismissal.	Total.	Death.	Resignation and Discharge.	Dismissal.	Total.	Death.	Resignation and Discharge.	Dismissal.	Total.	Death.	Resignation and Discharge.	Dismissal.	Total.	Death.	Resignation and Discharge.	Dismissal.	Total.	Death.	Resignation and Discharge.	Dismissal.	Total.					
14'30	—	—	—	—	363'00	5	36	8	49	240'50	3	27	3	33	859'98	12	84	13	109	526'99	4	60	6	70	1,818'60	Standard Gauge.		
26'33	—	7	—	7	84'00	—	11	5	16	85'00	—	17	6	23	146'66	6	28	9	43	190'33	—	50	16	66	859'76	STATE LINES WORKED BY COMPANIES.		
6'08	—	—	—	—	79'00	—	10	—	10	116'00	3	36	—	39	154'62	1	16	1	18	189'90	3	47	2	52	753'78	East Indian (a).		
12'00	—	3	2	5	421'00	5	48	110	63	241'00	2	23	2	27	811'33	11	117	39	167	404'58	3	60	26	89	2,616'05	Bengal-Nágpur.		
13'00	—	—	—	—	58'75	—	11	5	16	23'91	—	1	—	1	140'08	—	24	9	33	134'01	—	14	3	17	702'53	Indian Midland (b).		
14'49	—	1	—	1	107'75	1	7	2	10	59'20	1	5	3	9	247'31	1	33	4	38	212'34	2	55	6	63	904'47	STATE LINES WORKED BY THE STATE.		
—	—	—	—	—	Worked by the Eastern Bengal State Railway.												3'75	—	1	—	1	—	—	—	—	—	(125'01)	North-Western (State) (c).
—	—	—	—	—	1'00	—	—	—	—	—	—	—	—	—	2'00	—	—	—	—	11'08	—	1	—	1	6'22	Oudh and Rohilkhand (State).		
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	Eastern Bengal (State) (d).		
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	Bengal Central.		
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	Calcutta Port Commissioners.		
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	East Coast (State).		
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	LINES WORKED BY GUARANTEED COMPANIES.		
30'00	—	—	—	—	365'00	9	32	—	41	310'00	1	28	—	29	879'00	13	57	3	73	682'00	2	41	2	45	1,490'08	Great Indian Peninsula (e).		
—	—	—	—	—	98'00	2	9	—	11	52'00	—	4	—	4	150'00	2	10	—	12	101'00	—	10	—	10	484'87	Bombay, Baroda, and Central India (f).		
00'00	3	33	4	40	89'00	1	4	3	8	446'00	2	30	2	34	221'50	2	15	5	22	1,052'83	8	125	26	159	839'22	Madras.		
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	LINES OWNED BY NATIVE STATES AND WORKED BY COMPANIES.		
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	The Nizam's Guaranteed State (g).		
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	The Gaekwar's Petlad.		
75'80	3	44	6	53	1,666'50	23	168	33	224	1,573'61	12	171	16	199	3,616'23	48	385	83	516	3,595'06	22	463	87	572	10,488'93	Total Standard Gauge.		
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	Metre Gauge.		
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	STATE LINES WORKED BY COMPANIES.		
3'00	—	—	—	—	33'00	—	3	1	4	41'00	—	7	—	7	79'00	1	11	4	16	91'00	—	18	6	24	756'30	{ Bengal and North-Western. } { Tirhoot Section Company's Section. }		
24'30	1	4	—	5	229'00	—	36	9	45	262'00	5	37	14	56	421'20	6	58	11	75	484'30	9	70	19	98	1,769'21			
35'00	2	2	1	5	72'00	—	16	1	17	246'00	2	51	113	66	149'00	—	19	2	21	496'00	5	76	19	100	1,512'29			
44'00	—	12	1	13	62'00	1	1	1	3	506'00	1	13	12	26	107'00	2	11	2	15	683'00	3	49	21	73	1,049'31	Southern Mahratta (i).		
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	South Indian (j).		
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	STATE LINE WORKED BY THE STATE.		
44'30	—	1	1	2	46'00	2	6	4	12	119'00	—	13	4	17	125'25	3	18	4	25	356'73	1	45	16	62	725'33	Burma (State).		
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	ASSISTED COMPANIES.		
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	4'79	Deoghur.	
1'00	—	—	—	—	9'00	—	—	—	—	4'00	—	—	—	—	24'99	1	—	—	1	29'06	—	9	4	13	263'18	Rohilkund and Kumaon (Company's Section) (k).		
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	Bengal Dooars.		
—	—	—	—	—	2'00	—	—	—	—	2'00	—	—	—	—	7'59	—	—	—	—	3'41	—	2	—	2	77'50	Dibru-Sadiya.		
—	—	—	—	—	—	—	—	—	—	(m) 2'00	—	—	—	—	2'00	—	—	—	—	3'00	—	—	—	—	—	349'80	LINES OWNED AND WORKED BY NATIVE STATES.	
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	Jodhpore-Bikaner.		
4'41	—	—	—	—	23'00	—	3	1	4	5'00	—	1	—	1	34'66	—	3	1	4	27'41	1	8	—	9	366'99	Jodhpore Section. Bikaner Section.		
158'01	3	19	3	25	476'00	3	65	17	85	1,187'00	8	122	43	173	950'69	13	120	24	157	2,174'51	19	277	85	381	6,874'70	Bhāvnagar-Gondal-Junágarh-Porbandar.		
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	Total Metre Gauge.		

(h) Including the Gaekwar's Mehsana and the Papanpur-Deesa Railways.
 (i) Including the Guntakal-Mysore Frontier, the Southern Mahratta Railway (Mysore section) the Kolhapur, the Yesvantpur-Mysore Frontier and the Mysore-Nanjangud Railway.
 (j) Includes the Pondicherry Railway.
 (k) Including the Rohilkhand-Kumaon (Lucknow-Bareilly Section).
 (l) Including the Jetalpur-Raikot Railway.
 (m) Including the West Indian.
 NOTE.—The figures within parentheses are not included in the total.

3. *Provident Institutions.*—The following statement gives the number of depositors in the State Railway Provident Fund Institutions, and the sums at their credit on the 31st of December 1893:—

STATEMENT No. 35.

Serial Number.	Railway.	No. of Staff Depositing.	No. of Depositors.		Amount at Credit on the 31st December 1892.			
			Voluntary.	Com- pulsory.	Voluntary.	Com- pulsory.	Bonus.	Total.
	<i>Standard Gauge.</i>							
	STATE LINES WORKED BY COMPANIES.				Rs.	Rs.	Rs.	Rs. (a)
II.	Bengal-Nágpur - - -	1,183	39	1,183	4,705	81,608	42,056	1,28,869
III.	Indian Midland (b) - -	1,441	48	1,441	1,487	1,42,214	6,774	1,50,475
	Total - - -	2,624	87	2,624	6,192	2,23,822	48,830	2,78,844
	STATE LINES WORKED BY THE STATE.							
IX.	North-Western (State) - -	4,881	266	4,878	45,801	10,34,644	9,54,544	20,35,009
XI.	Oudh and Rohilkhand (State) -	1,346	69	1,287	11,686	2,87,997	1,59,776	4,59,459
XII.	Eastern Bengal (State) - -	2,586	(c) 49	2,568	11,455	4,20,188	3,48,772	7,80,415
XV.	East Coast (State) - - -	288	—	288	—	3,511	1,334	4,845
	Total - - -	9,083	384	9,021	68,942	17,46,360	14,64,426	32,79,728
	Total Standard Gauge -	11,707	471	11,645	75,134	19,70,182	15,13,256	35,58,572
	<i>Metre Gauge.</i>							
	STATE LINES WORKED BY COMPANIES.							
XXXIII.	Bengal and North-Western— Tirhoot Section - - -	875	27	875	17,465	1,36,725	90,791	2,44,981
	Company's Section - - -							
XXXV.	Rajputana-Malwa - - -	2,780	170	2,769	52,886	5,41,590	4,84,188	10,78,664
XXXVII.	Southern Mahratta - - -	2,703	—	2,703	—	2,48,018	85,347	(d) 3,69,991
XXXIX.	Southern Mahratta (Mysore Section) - - -							
XL.	South Indian - - -	1,872	4	1,872	106	1,20,102	50,779	1,70,987
	Total - - -	8,230	201	8,219	70,457	10,46,035	7,11,105	18,64,623
	STATE LINES WORKED BY THE STATE.							
XLIII.	Eastern Bengal (State)— Northern and Behar Sections, (including the Kaunia- Dharla 2' 6" gauge branch) - - -	Included with standard gauge section.				—	—	—
	Dacca Section - - -							
XLIV.	Burma (State) - - -	1,398	30	1,369	6,660	1,56,575	1,18,316	2,81,551
	Total - - -	1,398	30	1,369	6,660	1,56,575	1,18,316	2,81,551
	Total Metre Gauge -	9,628	231	9,588	77,117	12,03,010	8,29,421	21,46,174
	COLLIERIES.							
	Umaria Colliery - - -	17	1	16	734	8,280	3,538	12,552
	Warora Colliery - - -	35	3	32	899	6,201	3,847	10,947
	Total Collieries - - -	52	4	48	1,633	14,481	7,385	23,499
	Grand Total - - -	21,387	706	21,281	1,53,884	31,87,673	23,50,062	57,28,245

(a) A further sum of Rs. 3,577 is standing at the credit of the numbers on 31st December 1893 on account of dividend accrued on investments after allowing for expenses of management.

(b) Including the Bhopal-Itarsi Railway.

(c) These are included in the number of compulsory depositors.

(d) Including Rs. 36,626 on account of interest.

4. *Railway Volunteer Corps*.—The following abstract gives the enrolled strength and the number of efficient in the several Railway Volunteer Corps on the 31st of March 1894:—

STATEMENT No. 36.

Serial Number.	Corps.	Enrolled strength.	Efficients.				Non-Efficients.	Sergeant Instructors, 1st and 2nd Class.	Drill Instructors.	Head-Quarters.	Remarks.
			Officers.	Non-commissioned Officers.	Volunteers.	Total.					
I.	East Indian Railway	1,640	61	170	1,362	1,593	47	15	—	Jamálpur.	
II.	Bengal-Nággpur Railway	(a) 554	21	35	490	546	8	6	—	Nággpur.	(a) 193 of these are either non-railway employés or being railway employés are either Jews or Portuguese, not shown in the numerical and casualty return under the head of "Europeans" and "Eurasians."
III.	Indian Midland Railway	384	19	46	316	381	3	3	—	Jhánsi.	
IX.	North-Western (State) Railway—3rd Punjab (North-Western (State) Railway) Volunteer Rifles.	1,150	35	126	977	1,138	12	10	1	Lahore.	
XI.	Oudh and Rohilkhand (State) Railway—(i.) Oudh Volunteer Rifles.	206	9	24	164	197	9	1	—	Lucknow.	
	(ii.) Oudh Volunteer Rifles (Reserve).	12	—	—	12	12	—	—	—	Lucknow.	
	(iii.) Rohilkhand Volunteer Rifles.	83	2	7	73	82	1	1	1	Bareilly.	
	(iv.) Gházipur Volunteer Rifles.	3	—	—	3	3	—	—	—	Gházipur.	
	(v.) Gházipur Volunteer Rifles (Reserve).	1	—	—	1	1	—	—	—	Gházipur.	
	(vi.) Cawnpore Volunteer Rifles.	3	—	—	3	3	—	—	—	Cawnpore.	
	(vii.) Oudh Light Horse.	1	—	1	—	1	—	—	—	Lucknow.	
XII.	Eastern Bengal (State) Railway : Active	475	20	52	387	459	16	3	—	Sealdah.	
	Reserve	26	1	2	19	22	4	—	—	Seraiganj.	
XVIII.	Great Indian Peninsula Railway.	1,109	32	194	881	1,107	2	10	2	Bombay.	
XIX.	Bombay, Baroda, and Central India Railway —1st Battalion Bombay, Baroda, and Central India Railway Volunteer Rifles.	454	19	64	319	402	52	5	1	Bombay.	
	Reserve	23	2	2	18	22	1	—	—	—	
XX.	Madras Railway	1,017	26	105	786	917	100	9	—	Perambúr.	
XXVI.	The Nizam's Guaranteed State Railway—Hyderabad Volunteer Rifles.	215	4	20	190	214	1	1	—	Secunderabad.	
	Carried forward	7,356	251	848	6,001	7,100	256	64	5		

Z

STATEMENT No. 36—concluded.

Serial Number.	Corps.	Enrolled strength.	Efficients.				Non-Efficients.	Sergeant Instructors, 1st and 2nd Class.	Drill Instructors.	Head-Quarters.	Remarks.
			Officers.	Non-commissioned Officers.	Volunteers.	Total.					
	Brought forward -	No. 7,356	No. 251	No. 848	No. 6,001	No. 7,100	No. 256	No. 64	No. 5		
XXXIII.	Bengal and North-Western Railway (a)—										
	D Company -	16	1	2	13	16	—	(b)	—	Sonepore.	(a) Including the Tirhoot section.
	E Company -	(c) 63	3	7	53	63	—	(b) 1	—	Gorakhpur.	(b) One first-class sergeant - instructor performs the work of both the D and E Companies.
	Do. (Reserve) (d) 13	—	—	—	13	13	—	—	—	Samastipur.	(c) 14 non-railway employes included in the enrolled strength.
	F Company -	87	3	10	74	87	—	1	—	Gonda.	(d) Ninenon-railway employes included in the enrolled strength.
	G Company -	32	3	3	21	27	5	1	—	Gorakhpur.	(e) Non - railway employes.
	Do. (Reserve) (e) 3	—	—	—	1	1	2	—	—		(f) 86 of these are non-railway employes.
XXXV.	Gorakhpur Light Horse.	11	1	2	7	10	1	1	—		(g) Enrolled strength includes 99 non-way employes.
XXXV.	Rajputana-Malwa Railway—2nd Battalion, Bombay, Baroda and Central India Railway Volunteer Rifles.	1,018	35	145	801	981	37	10	—	Ajmere.	(h) Seven Volunteers belong to "F" Company and their headquarters are Ghadechi, and 1 non-commissioned officer belongs to "E" Company and his headquarters are Ahmedabad.
XXXVII.	Southern Mahratta Railway.	546	12	42	477	531	15	5	—	Hubli.	
XL.	South Indian Railway -	(f) 800	21	99	605	725	75	8	—	Negapatam	
XLIV.	Burma State Railway -	(g) 528	14	77	343	434	94	8	2	Rangoon.	
XLVII.	Rohilkund and Kumaon Railway (Company's Section)—Rohilkhand Volunteer Rifles.	22	1	2	18	21	1	1	1	Bareilly.	
LVI.	Bhavnagar - Gondal - Junagarh - Porbandar Railway—1st Battalion Bombay, Baroda, and Central India Railway Volunteer Rifles.	66	5	5	50	60	6	1	—	Ghadechi.	
LXIII.	Darjeeling - Himalayan Railway — Northern Bengal Mountain Rifles, "A" and "B" Troops.	18	1	1	16	18	—	—	—	Darjeeling.	
LXI.	Morvi Railway—Bombay, Baroda, and Central India Railway Volunteer Rifles, "F" Company. (h)	8	—	1	7	8	—	1	—	Ghadechi.	
	Total -	10,587	351	1,244	8,500	10,095	492	102	8		

5. The statement on the next two pages shows the strength and cost of police on the standard and metre gauge railways (open lines) and the amount of compensation payments made during 1893 on account of thefts.

STATEMENT No. 37.

STRENGTH and COST of POLICE on the STANDARD and METRE GAUGE RAILWAYS (Open Lines) and the Amount of Compensation Payments due to Thefts during 1893.

STATEMENT

STRENGTH and COST of POLICE on the STANDARD and METRE GAUGE RAILWAYS

Serial Number.	Railway.	Subordinate Officers.	Constables and Men.	PORTION OF THE TOTAL ANNUAL COST BORNE BY THE RAILWAY.*			
				Supervision.	Constables and Men.	Contingencies.	Total Cost of Force to the Railway.
	<i>Standard Gauge.</i>						
	STATE LINES WORKED BY COMPANIES.	Average No.	Average No.	Rs.	Rs.	Rs.	Rs.
I.	East Indian (a) - - - -	26	1,407	39,225	89,465	15,200	143,890
II.	Bengal-Nagpur - - - -	5	260	6,483	17,734	2,218	26,435
III.	Indian Midland (b) - - - -	26	214	12,811	(c) 14,250	3,322	30,383
	STATE LINES WORKED BY THE STATE.						
IX.	North-Western (d) - - - -	40	1,834	—	97,375	8,145	105,520
X.	Hyderabad-Umarkot - - - -	—	20	—	1,374	—	1,374
XI.	Oudh and Rohilkhand (e) - - - -	—	342	(f) 259	22,075	1,226	23,560
XII.	Eastern Bengal (g) - - - -	60	586	1,443	32,640	41	34,129
XV.	East Coast (State) - - - -	—	60	—	1,380	—	1,380
	LINES WORKED BY GUARANTEED COMPANIES.						
XVIII.	Great Indian Peninsula (h) - - - -	17	931	29,501	93,254	9,106	(i) 131,861
XIX.	Bombay Baroda, and Central India (j)	35	234	16,965	34,538	4,324	55,827
XX.	Madras - - - -	7	292	6,027	25,971	4,907	36,905
	LINE OWNED BY NATIVE STATE AND WORKED BY COMPANY.						
XXVI.	The Nizam's Guaranteed State (k) -	27	154	8,033	21,551	2,160	31,744
	LINE OWNED BY NATIVE STATE AND WORKED BY STATE RAILWAY AGENCY.						
XXIX.	Rajpura-Bhatinda - - - -	5	46	—	744	—	744
	<i>Metre Gauge.</i>						
	STATE LINES WORKED BY COMPANIES.						
XXXIII.	Bengal and North-Western:— Tirhoot Section - - - -	5	330	3,812	23,275	396	27,423
	Company's Section - - - -						
XXXV.	Rajputana-Malwa (l) - - - -	125	575	44,158	65,920	10,725	1,20,803
XXXVII.	Southern Mahratta (m) - - - -	9	502	10,389	39,687	7,067	57,143
XL.	South Indian - - - -	—	218	(n)	(n)	(n)	(o) 32,066
	STATE LINE WORKED BY THE STATE.						
XLIV.	Burma - - - -	39	188	—	13,920	—	13,920
	ASSISTED COMPANIES.						
XLVII.	Rohilkund and Kumaon (Company's Section) (p) - - - -	11	120	—	6,757	—	6,757
XLVIII.	Bengal-Dooars - - - -	Information not furnished		—	—	—	—
XLIX.	Dibrū-Sadiya (q) - - - -	—	—	—	—	—	—
	LINE OWNED AND WORKED BY NATIVE STATE.						
LIV.	Bhāvnagar-Gondal-Junāgarh-Porbandar (r)	25	106	—	—	—	(s) 30,262

* Based on figures given in the Revenue Accounts.

(a) Including the Delhi-Umballa-Kalka and the Tarkessur railways.

(b) Including the Bhopal-Itarsi Railway.

(c) Excluding Rs. 5,295, being the cost of 1,291 men (Watch and Ward Locomotive and Cash Departments) from 1st January 1888 to 31st December 1892 included in the Railway Accounts for the first half 1893.

(d) Including the Jammu and Kashmir Railway.

(e) The figures relate entirely to the watch and ward chowkidars employed by the railway. No charge is made on account of the regular railway police.

(f) Represents pay of one clerk.

(g) Including the Bengal Central Railway and the metre gauge sections of the Eastern Bengal (State) Railway.

(h) Including the Wardha Coal, the Dhond-Manmad, and the Khamgaon and Amraoti Railways.

(i) The cost shown against this railway represents 70ths of the total cost of the police force.

(j) Including the Godhra-Rutlam Railway.

No. 37.

(Open Lines), and the Amount of Compensation Payments due to Thefts during 1893.

Cost of Force to the Railway per Mean Mile worked.	Compensation Payments due to Thefts or carelessness of Police.	Compensation Payments per 1,000 Tons of Goods moved during the year.	Mean Mileage worked during the Year. (See also Statement No. 25, Pages 126 to 128.)	Railway.	Serial Number.
				<i>Standard Gauge.</i>	
Rs.	Rs.	Rs.	Miles.	STATE LINES WORKED BY COMPANIES.	
79'12	1,876	—	1,818'60	East Indian (a) - - - - -	I.
30'75	24	—	859'76	Bengal-Nágpur - - - - -	II.
40'31	—	—	753'78	Indian Midland (b) - - - - -	III.
				STATE LINES WORKED BY THE STATE (c).	
43'08	509	0'11	2,449'20	North-Western (d) - - - - -	IX.
23'32	—	—	58'91	Hyderabad-Umarkot - - - - -	X.
33'54	1,584	1'89	702'53	Oudh and Rohilkhand (e) - - - - -	XI.
37'73	3,436	3'00	904'47	Eastern Bengal (g) - - - - -	XII.
10'93	—	—	81'29	East Coast (State) - - - - -	XV.
				LINES WORKED BY GUARANTEED COMPANIES.	
88'50	4,191	1'48	1,490'08	Great Indian Peninsula (h) - - - - -	XVIII.
115'14	1,433	1'00	484'87	Bombay, Baroda, and Central India (j) - - - - -	XIX.
43'97	3,062	3'05	839'22	Madras - - - - -	XX.
				LINE OWNED BY NATIVE STATE AND WORKED BY COMPANY.	
73'21	—	—	433'25	The Nizam's Guaranteed State - - - - -	XXVI.
				LINE OWNED BY NATIVE STATE AND WORKED BY STATE RAILWAY AGENCY.	
6'89	—	—	107'94	Rájpura-Bhátinda - - - - -	XXIX.
				<i>Metre Gauge.</i>	
				STATE LINES WORKED BY COMPANIES.	
36'26	207	2'00	756'30	Bengal and North-Western:— Tirhoot Section. Company's Section.	XXXIII.
68'28	4,149	2'00	1,769'21	Rajputana-Malwa (l) - - - - -	XXXV.
37'78	1,417	2'00	1,512'29	Southern Mahratta (m) - - - - -	XXXVII.
30'78	1,718	2'04	1,041'31	South Indian - - - - -	XL.
				STATE LINE WORKED BY THE STATE	
19'19	1,633	3'00	725'33	Burma - - - - -	XLIV.
				ASSISTED COMPANIES.	
25'65	—	—	263'18	Rohilkund and Kumaon (Company's Section) (p). - - - - -	XLVII.
—	—	—	—	Bengal-Dooars - - - - -	XLVIII.
—	—	—	—	Dibru-Sadiya (s) - - - - -	XLIX.
				LINES OWNED AND WORKED BY NATIVE STATES.	
82'46	214	1'00	366'99	Bhánagar-Gondal-Junágarh-Porbandar (r) - - - - -	LVI.

(k) Including the Bezwada Extension and the Bezwada-Godávari Section of the East Coast Railway.

(l) Including the Gáekwar's Mehsána and the Palanpur-Deesa Railways.

(m) Including the Southern Mahratta (Mysore Section) and the Guntakal-Mysore Frontier, the Yesvantpur-Mysore Frontier, the Mysore Nanjangúd, and the Kolhápúr Railways.

(n) Details not furnished.

(o) 1. Including Rs. 19,732-7-11, beng cost of Government supervision.

2. The difference between this and the figures given in the revenue accounts is due to adjustments appertaining to previous years.

(p) Including the Rohilkund and Kumaon (Lucknow-Bareilly Section).

(q) No separate railway police force is entertained.

(r) Including the Jetalsar-Rajkot Railway.

(s) Figures taken from the Revenue Accounts, which include Rs. 10,009 on account of railway magisterial charges.

CHAPTER XII.

ROLLING STOCK (REVENUE).

The following statement shows the average number of locomotives in use on the principal Railways and the work obtained from each during the year 1893.

STATEMENT No. 38.

Serial Number.	Railway.	Average Number of Locomo- tives in use.*	Total Engine Mileage.	Average Mileage per Engine.	Average Mileage per Engine per Diem.	Remarks.
	<i>Standard Gauge.</i>					* Shown in whole numbers, although in most of the original returns these figures have been given to two places of decimals.
	STATE LINES WORKED BY COMPANIES.					
I.	East Indian - - -	551	11,433,967	20,751	56·85	
II.	Bengal-Nágpur - - -	103	1,723,606	16,734	45·85	
III.	Indian Midland (a) - - -	102	1,578,067	15,811	43·32	(a) Includes the Bhopal-Itársi Railway.
	STATE LINES WORKED BY THE STATE.					
IX.	North-Western (State) (b) - -	561	10,010,450	17,844	48·89	(b) Includes the Hyderabad-Umarkot, the Jammu and Kashmir, and Rájpura-Bhátinda Railways.
XI.	Oudh and Rohilkhand (State) -	154	3,100,357	20,132	55·16	(c) Includes the Bengal Central Railway.
XII.	Eastern Bengal (State) (c) - -	97	2,841,409	25,582	70·09	
	LINES WORKED BY GUARANTEED COMPANIES.					
XVIII.	Great Indian Peninsula (d) - -	605	11,195,225	18,505	50·70	(d) Includes the Wardha Coal, Dhond-Manmád, the Khámgaon, and Amráoti Railways.
XIX.	Bombay, Baroda, and Central India (e)	130	2,824,253	21,725	59·52	(e) Includes the Godhrr-Rutlam and the Gaekwar's Petlád Railways.
XX.	Madras - - - - -	164	3,098,343	18,892	51·76	
	LINE OWNED BY NATIVE STATE AND WORKED BY COMPANY.					
XXVI.	The Nizam's Guaranteed State (f) -	48	768,611	16,013	43·87	(f) Includes the Bezwada extension and the Bezwada Godávri section of the East Coast Railway.
	<i>Metre Gauge.</i>					
	STATE LINES WORKED BY COMPANIES.					
XXXIII.	Bengal and North-Western :— Tirhoot Section - - -	100	1,928,638	19,286	52·84	(g) Includes the Gaekwar's Mehsána and the Pálanpur-Deesa Railway.
	Company's Section - - -					
XXXV.	Rajputana-Malwa (g) - - -	424	7,491,944	17,670	48·41	(h) Includes the Guntakal-Mysore Frontier, the Southern Mahratta (Mysore Section) the Kolhápúr, the Yesvantpur-Mysore Frontier, and the Mysore-Nanjangúd Railways.
XXXVII.	Southern Mahratta (h) - - -	204	3,394,345	16,639	45·59	(i) Includes the Pondicherry Railway.
XL.	South Indian (i) - - - - -	202	3,744,853	18,539	50·79	
	STATE LINES WORKED BY THE STATE.					
XLIII.	Eastern Bengal— Northern and Behar Sections, (including the Kaunia-Dharlla 2' 6" gauge Branch) - - -	70	1,578,408	22,549	61·78	(j) Includes the Jetalgar-Bajet Railway.
	Dacca Section - - - - -	12	213,322	17,777	48·70	
XLIV.	Burma (State) - - - - -	117	2,279,184	19,480	53·37	
	LINES OWNED AND WORKED BY NATIVE STATES.					
LV.	Jodhpore-Bickaneer :— Jodhpore Section - - -	13	339,382	26,106	71·52	
	Bickaneer Section - - - - -					
LVI.	Bhávnagar - Gondal - Junágarh - Por- bandar (d) - - - - -	33	625,875	18,966	51·96	

2. Statement No. 39 on the following pages shows the number of engines and vehicles used in conveying traffic, and the number of miles travelled by trains during 1893.

STATEMENT No. 39.

ENGINES and VEHICLES used in conveying TRAFFIC and the NUMBER of MILES travelled
by TRAINS on the STANDARD and METRE GAUGE RAILWAYS during the year ending
the 31st December 1892.

ENGINES and VEHICLES used in conveying TRAFFIC and the NUMBER of Miles travelled by TRAINS

Serial Number.	Railway.	Mean Mileage worked (From Statement No. 25, pages 126 to 128.)	Number of Engines and Vehicles used in conveying						
			Engines.	Carriages.					
				First Class.	Second Class.	Third or Inter- mediate Class.	Lowest (Third or Fourth) Class.	Com- posite.	Total Number.
<i>Standard Gauge.</i>									
STATE LINES WORKED BY COMPANIES.									
I.	East Indian (a) - - -	1,818·60	576	110	94	70	680	108	1,062
II.	Bengal-Nágpur - - -	859·76	103	8	15	8	181	40	252
III.	Indian Midland (b) - - -	753·78	109	24	17	220	—	45	306
IV.	Bhopal-Itársi (British section) -	(13·11)	Worked by the Indian Midland Railway.						
V.	Godhra-Rutlam - - -	(23·97)	Worked by the Bombay, Baroda, and Central India Railway.						
VI.	Wardha Coal - - -	(44·88)	Worked by the Great Indian Peninsula Railway.						
VII.	Dhond-Mannád - - -	(145·44)							
VIII.	Bezwa Extension (including the Bezwa-Godávarai section of the East Coast Railway.	(100·02)	Worked by the Nizam's Guaranteed State Railway.						
	Total - - -	3,432·14	788	142	126	298	861	193	1,620
STATE LINES WORKED BY THE STATE.									
IX.	North-Western (State) (c) - -	2,616·05	586	94	82	78	782	203	1,239
X.	Hyderabad-Umarkot - - -	(58·91)	Worked by the North-Western (State) Railway.						
XI.	Oudh and Rohilkhand (State) -	702·53	157	40	25	20	259	67	411
XII.	Eastern Bengal (State) (d) -	373·93	97	16	12	52	199	57	336
XIII.	Bengal Central - - -	(125·01)	Worked by the Eastern Bengal (State) Railway.						
XIV.	Calcutta Port Commissioners' -	6·22	6	—	—	—	—	—	—
XV.	East Coast (State) - - -	81·29	29	4	3	—	26	4	37
	Total - - -	3,780·02	875	154	122	150	1,266	331	2,023
LINES WORKED BY GUARANTEED COMPANIES.									
XVIII.	Great Indian Peninsula (e) -	1,490·08	605	88	150	561	—	97	896
XIX.	Bombay, Baroda, and Central India (f). - - -	498·22	134	30	41	22	243	55	391
XX.	Madras - - -	839·22	164	34	70	—	369	48	521
	Total - - -	2,827·52	903	152	261	583	612	200	1,808
ASSISTED COMPANIES.									
XXI.	Delhi-Umballa-Kalka - - -	(161·40)	Worked by the East Indian Railway.						
XXII.	Tarkessur - - -	(22·23)							
	Total - - -	(183·63)	—	—	—	—	—	—	—
LINES OWNED BY NATIVE STATES AND WORKED BY COMPANIES.									
XXIII.	Khámgaon - - -	(7·55)	Worked by the Great Indian Peninsula Railway.						
XXIV.	Amráoti - - -	(5·44)							
XXV.	Bhopal-Itársi (Native State section). - - -	(44·00)	Worked by the Indian Midland Railway.						
XXVI.	The Nizam's Guaranteed State (g) -	433·25	50	16	8	—	52	16	92
XXVII.	The Gaekwar's Pettád - - -	(13·35)	Worked by the Bombay, Baroda, and Central India Railway.						
	Total - - -	433·25	50	16	8	—	52	16	92
LINES OWNED BY NATIVE STATES AND WORKED BY STATE RAILWAY AGENCY.									
XXIX.	Rájpura-Bhátinda - - -	(107·94)	Worked by the North-Western (State) Railway.						
XXX.	Jammu and Kashmir (Native State section). - - -	(15·92)							
	Total - - -	(123·86)	—	—	—	—	—	—	—
	Total Standard Gauge -	10,472·93	2,616	464	517	1,031	2,791	740	5,543

(a) Includes the Delhi-Umballa-Kalka and the Tarkessur Railways and foreign lines worked over.

(b) Includes the Bhopal-Itársi Railway and foreign lines worked over.

(c) Includes the Hyderabad-Umarkot, Jammu and Kashmir, and Rájpura-Bhátinda Railways, and foreign lines worked over ; but excludes the stock belonging to the late Salt Branch and the Ferozepore Tramway.

(d) Includes the Bengal Central Railway.

NOTE.—The figures within parentheses are not included in the total.

on the STANDARD and METRE GAUGE RAILWAYS during the year ending the 31st December 1893.

Traffic.			No. of Train-Miles run.						
Miscellaneous Coaching Vehicles (excluding Brake-vans).	Goods Vehicles of all descriptions (excluding Brake vans andCranes.)	Brake-vans.	Passenger (including Passenger proportion of mixed and light Train-Mileage).	Goods (including Goods proportion of mixed and light Train-Mileage).	Mixed and light Train-Mileage.	Total Train-Mileage.	Number of Train-Miles per mean Mile worked.	Railway.	Serial Number.
Standard Gauge.									
STATE LINES WORKED BY COMPANIES.									
156	8,936	341	4,370,592	5,865,910	3,960,600	10,236,502	5,628·78	East Indian (a) - - -	I.
40	3,404	108	412,818	1,112,384	1,089,782	1,525,202	1,773·99	Bengal-Nágpur - - -	II.
45	2,140	112	681,289	775,617	616,280	1,456,906	1,932·80	Indian Midland (b) - - -	III.
—	—	—	—	—	—	—	—	Bhopal-Itársi (British section) -	IV.
—	—	—	—	—	—	—	—	Godhra-Rutlam - - -	V.
—	—	—	—	—	—	—	—	Wardha Coal - - -	VI.
—	—	—	—	—	—	—	—	Dhond-Manmád - - -	VII.
—	—	—	—	—	—	—	—	Bezwada Extension (including the Bezwada-Godávari section of the East Coast Railway.)	VIII.
241	14,480	561	5,464,699	7,753,911	5,666,662	13,218,610	3,851·42	Total.	
STATE LINES WORKED BY THE STATE.									
290	10,063	511	3,394,723	5,612,942	3,905,513	9,007,665	3,443·23	North-Western (State) (c) -	IX.
—	—	—	—	—	—	—	—	Hyderabad-Umarkot - - -	X.
61	4,360	120	1,182,612	1,447,986	1,584,627	2,630,598	3,744·46	Oudh and Rohilkhand (State) -	XI.
103	2,068	63	1,076,276	841,812	752,252	1,918,088	5,129·54	Eastern Bengal State (d) - - -	XII.
—	—	—	—	—	—	—	—	Bengal Central - - -	XIII.
—	172	—	Information not available.				—	Calcutta Port Commissioners' -	XIV.
—	621	16	35,974	138,479	51,701	174,453	2,146·06	East Coast (State) - - -	XV.
454	17,284	710	5,680,589	8,041,219	6,294,093	13,730,804	3,638·46	Total.	
LINES WORKED BY GUARANTEED COMPANIES.									
149	7,953	590	3,719,654	6,174,704	1,095,903	9,894,358	6,640·15	Great Indian Peninsula (e) -	XVIII.
36	3,642	90	1,274,164	1,193,167	365,416	2,467,331	4,952·28	Bombay, Baroda, and Central India (f). - - -	XIX.
105	2,852	170	1,282,000	1,361,096	1,278,254	2,643,096	3,149·47	Madras - - -	XX.
290	14,447	850	6,275,818	8,728,967	2,739,573	15,004,785	5,306·68	Total.	
ASSISTED COMPANIES.									
—	—	—	—	—	—	—	—	{ Delhi-Umballa-Kalka - - -	XXI.
—	—	—	—	—	—	—	—	{ Tarkessur - - -	XXII.
—	—	—	—	—	—	—	—	Total.	
LINES OWNED BY NATIVE STATES AND WORKED BY COMPANIES.									
—	—	—	—	—	—	—	—	{ Khámgaon - - -	XXIII.
—	—	—	—	—	—	—	—	{ Amráoti - - -	XXIV.
—	—	—	—	—	—	—	—	Bhopal- Itársi (Native State section). - - -	XXV.
19	733	41	271,957	406,413	496,191	678,370	1,565·77	The Nizam's Guaranteed State (g) -	XXVI.
—	—	—	—	—	—	—	—	The Gaekwar's Petlád - - -	XXVII.
19	733	41	271,957	406,413	496,191	678,370	1,565·77	Total.	
LINES OWNED BY NATIVE STATES AND WORKED BY STATE RAILWAY AGENCY.									
—	—	—	—	—	—	—	—	{ Rájputra-Bhátinda - - -	XXIX.
—	—	—	—	—	—	—	—	{ Jammu and Kashmir (Native State section). - - -	XXX.
—	—	—	—	—	—	—	—	Total.	
1,004	46,944	2,162	17,702,059	24,930,510	15,196,519	42,632,569	4,073·16 (h)	Total Standard Gauge.	

(e) Includes the Wardha Coal, Dhond-Manmád, Khámgaon, and Amráoti Railways.

(f) Includes the Godhra-Rutlam and the Gaekwar's Petlád Railway.

(g) Includes the Bezwada Extension, the Bezwada-Godávari section of the East Coast Railway, and 3·10 miles worked over twice by each train.

(h) Excludes the Calcutta Port Commissioners' Railway.

ENGINES and VEHICLES used in conveying TRAFFIC and the NUMBER of MILES travelled by TRAINS

Serial Number.	Railway.	Mean Mileage worked (From Statement No. 25, pages 126 to 128.)	Number of Engines and Vehicles used in conveying						
			Engines.	Carriages.					
				First Class.	Second Class.	Third or Intermediate Class.	Lowest (Third or Fourth) Class.	Composite.	Total Number.
Metre Gauge.									
STATE LINES WORKED BY COMPANIES.									
XXXIII.	Bengal and North-Western: Tirhoot section - - -	756·30 (209·26)	100	32	10	—	221	62	325
XXXIV.	Company's section - - -								
XXXIV.	Rohilkund and Kumaon (Lucknow-Bareilly section).		Worked by the Rohilkund and Kumaon Railway (Company's section).						
XXXV.	Rajputana-Malwa (a) - - -	1,769·21	424	130	96	50	766	94	1,136
XXXVI.	Palampur-Deesa - - -	(2·56)	Worked by the Rajputana-Malwa Railway.						
XXXVII.	Southern Mahratta (b) - - -	1,512·29	221	30	42	—	482	81	685
XXXVIII.	Guntakal-Mysore Frontier (99·22)	(296·00)	Worked by the Southern Mahratta Railway.						
XXXIX.	Southern Mahratta (Mysore section).								
XL.	South Indian (c) - - -	1,049·31	204	19	44	—	573	47	683
	Total - - -	5,087·11	949	211	192	50	2,042	284	2,779
STATE LINES WORKED BY THE STATE.									
XLIII.	Eastern Bengal (State): Northern and Behar sections (including the Kaunia-Dharla, 2' 6" gauge, branch).	442·62	75	17	10	33	158	32	250
	Dacca section - - -	85·92	14	4	4	5	33	10	56
XLIV.	Burma (State) - - -	725·33	120	34	56	—	350	57	497
	Total - - -	1,255·87	209	55	70	38	541	99	803
ASSISTED COMPANIES.									
XLVI.	Deoghur - - -	4·79	3	—	—	—	8	2	10
XLVII.	Rohilkund and Kumaon (Company's section) (c). - -	263·18	27	12	3	3	94	21	133
XLVIII.	Bengal-Dooars - - -	28·84	4	1	—	—	14	4	19
XLIX.	Dibru-Sadiya - - -	77·50	18	—	—	—	13	8	21
	Total - - -	374·31	52	13	3	3	129	35	183
LINES OWNED BY NATIVE STATES AND WORKED BY COMPANIES.									
LI.	The Gaekwar's Mehsana - -	(92·63)	Worked by the Rajputana-Malwa Railway.						
LII.	Kolhapur - - -	(29·07)							
LIII.	Yesvantpur-Mysore Frontier - -	(29·05)	Worked by the Southern Mahratta Railway.						
LIV.	Mysore-Nanjangud - - -	(15·25)							
	Total - - -	(166·00)	—	—	—	—	—	—	—
LINES OWNED AND WORKED BY NATIVE STATES.									
LV.	Jodhpore-Bickaneer: Jodhpore section - - -	349·80	13	7	2	—	48	6	63
	Bickaneer section - - -								
LVI.	Bhavnagar - Gondal - Junagarh-Porbandar (f). - - -	366·99	33	22	10	—	128	20	180
LVII.	Jetalsar-Rajkot - - -	(33·44)	Worked by the Bhavnagar-Gondal-Junagarh-Porbandar Railway.						
	Total - - -	716·79	46	29	12	—	176	26	243
FOREIGN LINES.									
IX.	West of India Portuguese - -	51·00	15	2	2	—	16	2	22
LXI.	Pondicherry - - -	(7·80)	Worked by the South Indian Railway.						
	Total - - -	51·00	15	2	2	—	16	2	22
	Total Metre gauge - - -	7,485·08	1,271	310	279	91	2,904	446	4,030

(a) Includes the Palampur-Deesa and the Gaekwar's Meshana Railways.

(b) Includes the Guntakal-Mysore Frontier, the Southern Mahratta (Mysore section), the Kolhápúr, the Yesvantpur-Mysore Frontier, and the Mysore-Nanjangúd Railways.

(c) Includes the Pondicherry Railway.

(d) Cannot be apportioned between coaching and goods.

No. 39—concluded.

on the STANDARD and METRE GAUGE RAILWAYS during the Year ending the 31st December 1893—concluded.

Traffic.			No. of Train-Miles run.					Railway.	Serial Number.
Miscellaneous Coaching Vehicles (excluding Brake-vans).	Goods Vehicles of all descriptions (excluding Brake-vans and Cranes).	Brake-vans.	Passenger (including proportion of mixed and light Train Mileage.	Goods (including goods proportion of mixed and light Train Mileage.	Mixed and light Train-Mileage.	Total Train-Mileage.	No. of Train-Miles per mean Mile worked.		
Metre Gauge.									
STATE LINES WORKED BY COMPANIES.									
21	2,639	67	718,367	913,102	1,439,273	1,631,469	2,157·17	Bengal and North-Western : Tirhoot section. Company's section.	XXXIII.
—	—	—	—	—	—	—	—	Rohilkund and Kumaon (Lucknow Bareilly section).	XXXIV.
165	7,244	282	2,183,336	4,585,797	2,550,050	6,669,133	3,769·55	Rajputana-Malwa (a) — —	XXXV.
79	4,685	188	1,129,333	1,898,891	1,416,908	3,028,224	2,002·41	Palampur-Dessa — —	XXXVI.
—	—	—	—	—	—	—	—	Southern Mahratta (b) — —	XXXVII.
137	3,314	60	1,422,537	1,777,439	1,088,954	3,199,976	3,049·60	Guntakal-Mysore Frontier — —	XXXVIII.
402	17,882	597	5,453,573	9,075,229	6,495,185	14,528,802	2,856·00	Southern Mahratta (Mysore section). South Indian (c) — —	XXXIX. XL.
Total.									
STATE LINES WORKED BY THE STATE.									
34	1,955	51	546,049	758,134	619,353	1,304,183	2,933·25	Eastern Bengal (State): Northern and Behar sections (including the Kaunia-Dharla, 2' 6" gauge, branch).	XLIII.
11	246	10	87,431	89,239	154,796	176,670	2,056·22	Dacca section.	XLIV.
101	3,224	128	925,881	1,013,862	991,538	1,939,743	2,674·29	Burma (State) — — —	
146	5,425	189	1,559,361	1,861,235	1,765,687	3,420,596	2,723·69	Total.	
ASSISTED COMPANIES.									
15	8 659	2 27	213,526	237,876	379,179	(d) 14,932 451,402	3,117·33 1,716·36	Deoghur — — — Rohilkund and Kumaon (Company's section). (e).	XLVI. XLVII.
1	60 631	5 18	1,556 37,742	25,116 166,827	4,232 113,226	26,672 204,569	924·83 2,639·60	Bengal Doars — — — Dibru-Sadiya — — —	XLVIII. XLIX.
16	1,358	52	252,824	429,819	496,637	697,575	1,863·63	Total.	
LINES OWNED BY NATIVE STATES AND WORKED BY COMPANIES.									
—	—	—	—	—	—	—	—	The Gackwar's Mehsana — —	LI.
—	—	—	—	—	—	—	—	Kolhapur — — —	LII.
—	—	—	—	—	—	—	—	Yesvantpur-Mysore Frontier — —	LIII.
—	—	—	—	—	—	—	—	Mysore-Nanjangud — — —	LIV.
Total.									
LINES OWNED AND WORKED BY NATIVE STATES.									
6	220	8	159,646	160,777	272,425	320,423	916·01	Johdpore-Bickaneer: Johdpore section.	LV.
6	896	37	289,926	283,957	299,324	(g) 600,196	1,635·45	Bickaneer section. Bhavnagar-Gondal-Junagarh-Porbandar. (f)	LVI.
—	—	—	—	—	—	—	—	Jetalsar-Rajkot — — —	LVII.
12	1,116	45	449,572	444,734	571,749	920,619	1,284·36	Total.	
FOREIGN LINES.									
2	115	9	46,639	85,528	30,954	132,167	2,591·51	West of India Portuguese — — Pondicherry — — —	LX. LXI.
2	115	9	46,639	85,528	30,954	132,167	2,591·51	Total.	
578	25,896	892	7,761,969	11,896,545	9,360,212	19,699,759	2,631·87	Total metre gauge.	

(e) Includes the Rohilkund and Kumaon Railway (Lucknow-Bareilly section).

(f) Includes the Jetalsar-Rajkot Railway.

(g) Includes 26,313 miles run on the Jetalsar-Rajkot Railway not shown in the three preceding columns.

NOTE.—The figures shown within parentheses are not included in the totals.

CHAPTER XIII.

FLOOD DAMAGES, ETC.

In the following paragraphs details are furnished of the principal flood damages during 1893:

NORTH-WESTERN (STATE) RAILWAY SYSTEM (STANDARD GAUGE).

2. Heavy floods obtained in June, July, and August, and seriously damaged the line in several places on the Ráwalpindi, Sind-Sagar, and Sukkur districts. The most serious disasters were as follows:

On the 20th July, owing to an extraordinary rainfall in Kashmir and on the hills near Ráwalpindi, the rivers came down in high flood wrecking the railway bridge over the river Haroo near Lawrencepur, and doing other serious damage to the line between Lawrencepur and Sarai Kála. A temporary pile bridge was constructed over the river Haroo and opened for traffic on the 23rd September 1893. The Chablat bridge between Hasan Abdál and Burhán and the Budhoo bridge between Sarai Kála and Hasan Abdál were also damaged.

On the same day floods in the Jhelum river wrecked the Sind-Sagar and Bhera branches in the neighbourhood of Malakwál and Hanapur. Through communication was restored on the Sind-Sagar main line by a series of diversions which were completed on the 8th August. The Bhera branch was not reopened until five days later.

On the 23rd July, the line between Chenab West Bank and Mahmúd Kot was practically washed away, causing interruption to traffic for over a month; and on the 25th July the line at mile 591, between Gílawála and Shujabad, was breached, traffic being interrupted for five days.

On the 31st July, the line near Rádhan was breached by the bursting of the Ghara bund. A stone diversion was put in, and traffic was resumed on 13th August. The diversion was breached on the 16th, but was finally repaired on the 20th August.

On the 18th August a serious slip occurred in a high bank between Sohan and Riwát. The line was cleared and traffic resumed in ten days' time, although the slip continued to give trouble for some time afterwards.

There were very heavy falls of snow in February on the Sind-Pishin section between Dirgi and Fuller's Camp, causing interruptions to traffic on several occasions.

Sind-Pishin Section—On the 5th February a down mail with three engines stuck in the snow at mile 564, and more than half the train went off the line.

On the same day the line at mile 563½ was blocked by a snow drift, and the engine of a goods train was snowed up.

On the 11th February the line at mile 561½, between Mudgorge and Kachh, was blocked by a snow drift, in which an up mail train stuck and had to remain the whole night, not being finally worked into Kachh till about 18 hours on the following day.

On 12th March an enormous slip occurred in the shale cutting just above Puddle Hollow. A length of about 600 feet of line was wrecked and covered up with debris, estimated to amount to 30 or 40 lakhs of cubic feet, and the two crib bridges just below were crumpled up. A diversion with 300 feet curves and a new crib bridge were laid and opened for traffic on the 21st March.

EASTERN BENGAL (STATE) RAILWAY (STANDARD, METRE, AND SPECIAL GAUGES).

3. There were heavy floods during the year, but they did no appreciable damage. The river Kosi, however, gave much trouble at Ancharághát, and for some weeks the ferry-boats and goods waggons could not be brought within half a mile of each other, nor could the intervening swamps and quicksands be traversed by any means of conveyance; through traffic was in consequence stopped for a month.

EAST COAST (STATE) RAILWAY (STANDARD GAUGE).

4. *Bezawada-Godávari Section*.—Heavy rain fell on the 14th September; the line was washed away at mile $28\frac{1}{2}$ owing to a number of tanks having been breached, and at mile $24\frac{1}{2}$ the pitching of a 12-foot girder bridge was scoured out to a depth of 4 feet. Several tanks were also breached in mile $2\frac{1}{2}$, and the escaped flood waters rose to formation level, but the bank being well turfed no damage resulted.

Owing to a heavy rainfall between the 9th and 12th November, the high bank approaches to the Zerra Kaloa bridge at mile 75, constructed entirely of black cotton soil, slipped for three rail lengths, and a passenger train was detained for 12 hours.

Godávari-Cocanada Section.—The exceptionally heavy rainfall between the 9th and 12th November breached the line between Kadium and Samalkot stations at three points. The first breach at mile 101 was due to the bursting of a large tank, and necessitated the transshipment of passengers for two days. The second breach occurred near the north distant-signal of Dwárapúdi station; the line for three rail lengths was flooded, but the bank being low the damage done was speedily repaired. At the third breach, mile 120, the bank was topped and about 100 feet on the down stream side washed away; the damage being due to a number of tanks bursting a short distance above the railway.

BOMBAY, BARODA, AND CENTRAL INDIA RAILWAY (STANDARD GAUGE).

5. Through traffic had to be suspended on the Sábarmati bridge north of Ahmedabad for about nine hours on the 16th September, when the flood rose to such a height that it was considered unsafe to allow trains to pass.

MADRAS RAILWAY (STANDARD GAUGE).

6. Owing to the bursting of tanks caused by heavy rain during a cyclonic storm on the 6th November, the line in the 106th mile on the north-west section was submerged to a depth of 3 feet for a distance of about a quarter of a mile, the ballast was completely washed away, and the bank cut in several places. Traffic was interrupted for one day.

On the 9th November 1893, at mile $\frac{320}{10}$ on the Nilgiri branch, the Periyapallam river, which flows alongside the line, rose suddenly to an unprecedented height and dammed back the tributary stream which discharges itself through a 20-foot girder bridge at mile $\frac{320}{7}$. The water thus unable to escape backed up, and, flowing parallel to the embankment until it came to the lowest point on the gradient at mile $\frac{320}{10}$, washed away the ballast and left the rails suspended for about 160 feet, and a passenger train running into the breach, a very serious accident, attended with loss of life, ensued.

BENGAL AND NORTH-WESTERN RAILWAY SYSTEM (METRE GAUGE).

7. *Company's Section*.—No heavy floods occurred during the year under report on this section of the line, but the Ganges at Paleza Ghât and the Gogra at Takarmandi and Gogra Ghât set in against the station sites, and cut away many acres of valuable land.

At the Rapti river also a good deal of land has been cut away on the west bank, and heavy protection works are in hand.

Tirhoot Section.—The floods during the year were exceptionally severe. A flood in the river Bagmatti, a foot and a half higher than any previously recorded, crippled 3 spans of bridge No. 81 (6 spans of 40 feet) on the Sitamarhi branch and destroyed bridge No. 12 (3 spans of 40 feet) at the eighth mile, Durbhunga branch. Another flood in the Kamlah very seriously damaged the Jiwas bridge (4 spans of 40 feet), Eastern branch.

The flood on the Sitamarhi branch also topped the railway at Kantoul and flooded the station yard. None of the bridges gave way, but the ballast and earthwork of the bank was washed out in several places on the 15th mile, and traffic was interrupted.

The Kosi floods have cut into the eastern bank of the river to a dangerous extent both above and below Khanwa Ghât station; but so far the station itself has escaped any serious damage, some of the sidings only having had to be lifted.

RAJPUTANA-MALWA RAILWAY (METRE GAUGE).

8. On the 12th July, on the Rajputana section, a heavy flood from the Sabi river ran parallel to the railway bank, and, overtopping it, breached it at the 43rd mile from Delhi between Khalilpur and Jātaoli stations. The bank was breached in three places, the aggregate length of the breaches being about 700 feet. Temporary repairs were effected, and traffic was resumed on the 20th idem.

On the 8th August the line between Mandsaur and Dhodhar, on the Malwa section was breached by floods in two places, in the 187th and 201st miles. The break at the latter mileage was repaired the same evening, while a diversion was laid on the 10th idem at the former, where the breach extended to 500 feet.

SOUTHERN MAHRATTA RAILWAY SYSTEM (METRE GAUGE).

9. There was heavy rainfall along the line during the second and fourth quarters of the year, and the damage done was considerable.

On the 24th April, on the Poona branch, between Karad and Shenoli, the curtain wall joining the wings of a 3-foot culvert at mile 16 and the curtain wall of a 10-foot girder at mile 160 were washed away. Serious scour also took place under some 10-foot arches at miles 159 and 158.

Through heavy rain on the 12th October the main line was breached in two places at mileage 385. There were also breaches in the 375th mile just outside the south-west signal of the Sómidévipalli station, in one place the bank being washed away. Passengers had to be transhipped on the 12th and 13th.

On the 16th October, at mileage 56, Bijápur branch, between Lachyán and Tadval, a heavy flood undercut the bank, and the speed of trains had to be restricted to 3 miles an hour, night-running being stopped till the 23rd October. On the same date, on the Bellary-Kistna line, near Rungapuram, owing to the bursting—after 36 hours' heavy rain—of the bund of an irrigation tank situated about a mile and a half from the railway, an abutment of a culvert at mileage 292 was washed away, also a culvert at mileage 293, and 300 feet of bank. Passengers were trollied across the brooks while temporary diversions were being constructed, and traffic was resumed on the 21st idem.

SOUTH INDIAN RAILWAY (METRE GAUGE).

10. *Main Line.*—On the 23rd November, owing to heavy and continuous rain, an immense body of water from the ordinary drainage of the country, augmented by the discharge from breached tanks, swept down on and breached other tanks, finally attacking and causing serious damage to the railway embankments between Trichinopoly junction and South Kolattúr stations. The breaches and washes over aggregated about 1,800 lineal feet, ranging from 30 to 500 feet in length, and traffic was not resumed till the 9th December.

Negapatam Branch.—On the 24th November, immediately to the west of Nidáman-galam, damage was caused to the line by the breaching of some large irrigation channels. Traffic was interrupted till the 1st December.

Erode Branch.—Here, as in 1884, the drainage of the country, augmented by the flood water accumulated against the main line, and still further augmented by the water from the Wyacondan channel, swept down on to the railway near the Trichinopoly Fort station, submerging and breaching the line; the breaches aggregated about 900 lineal feet. Traffic was interrupted on 23rd November, and was not resumed till the 8th December.

Nellore Branch.—For some days before the 6th November very heavy rain fell over the country traversed by the South Indian Railway between Rénigunta and Nellore, and nearly all the principal rivers and tanks, of which latter there are many large ones scattered about the country, were full almost to overflowing.

On the 6th idem a cyclonic burst of rain fell, causing rivers and tanks to overflow and to breach their embankments, and an immense volume of water thus let loose devastated the country, partly submerging villages, and so seriously damaging the railway as to completely cut off communication between Rénigunta and all stations north of Venkatagiri. The embankment between Venkatagiri and Vendode stations at mile 302½ was topped by the flood and partly swept away, and the banks at miles

307½ and 308½ were severely damaged; between Gudur and Manubólu stations many banks settled badly, and through communication with Nellore was not restored till the 3rd December.

BURMA (STATE) RAILWAY (METRE GAUGE).

11. Unusually heavy floods took place on the Toungoo-Mandalay section on the 30th October, and the line was breached at mile 301, traffic being restored on the 2nd November. This breach was caused by the bursting of a temporary weir in the Nyaungyan-Minhla tank.

At Okpo, mile 102, on the Irrawaády section the line was flooded for nearly half a mile, and the abutments of one bridge on the Irrawaddy section, and of three on the Sittang section were scoured out.

DIBRU-SADIYA RAILWAY (METRE GAUGE).

12. On the 4th June the Brahmaputra river rose to an exceptional height, flooding and damaging 640 yards of line at the Steamer Ghât, and the traffic between the workshops and the Steamer Ghât was closed till the 9th. On the 17th June and on the 3rd and the 24th July the Ghât line was flooded. On the 10th August the Ghât line was again damaged by heavy rains and by the force of the river, nearly 1½ miles being entirely under water for three days.

THE GAEKWAR'S MEHSÁNA RAILWAY (METRE GAUGE).

13. On the 21st June, through heavy rain, 456 feet of line at the 9th mile, 194 feet at mileage 11, and 215 feet at mileage 12 on the Pátan branch were washed away, and traffic was stopped; on the 22nd the repairs, which had been done the previous evening, were carried away and the breaches widened; on the 23rd idem further breaches occurred at mileages 16, 17, 19, and 20. Traffic was resumed on the 25th.

On the 22nd June, owing to heavy rainfall and floods, the ballast and earth-work of a small culvert at mileage 24 and a portion of the line at mile 27 on the Kherálu branch were washed away. The pitching of the south abutment of the Motipura bridge was entirely destroyed, and the north pitching partly. The bridge approaches were repaired and passed for traffic on the 5th July.

On the 16th September, the ballast from mile 16·8 to 17·2 near Manúnd road on the Pátan branch and a part of the bank of the south abutment of the Roopen bridge were washed away. The line could not be fully repaired till the 20th idem.

BHAVNAGAR-GONDAL-JUNAGARH-PORBANDAR RAILWAY (METRE GAUGE).

14. Heavy rains commenced on the 18th June, and, continuing on the 19th and 20th, caused serious damage to this railway at several places.

Verával Section.—At the fourth mile 300 feet of line were partially washed away. At mile 23 a length of 400 feet of the south end of the Shápúr station-yard was destroyed. All four spans of the Kulwa bridge were swept away, the piers and the north abutment being left standing; but the south abutment was wrecked, and a complete gap cut in the bank behind. At mile 23·10 a gap was made in the bank 200 feet wide. At mile 12·37 200 feet of bank behind the north abutment and 150 feet behind the south abutment of the Ojhat north approach bridge were washed away. The 3rd, 4th, 5th, and 6th spans from the Jetalsar end of the Ojhat main bridge (nine spans of 100 feet) at mile 24·3 were also wrecked.

Porbandar Section.—At mileage 123, 300 feet of bank, about 22 feet in height, were washed away. The north approach of the Bhádar bridge (11 spans of 63-foot girders) at mileage 123·4 were also washed away for 100 feet, and the flood water topped the piers; but the bridge does not appear to have suffered any appreciable damage. At mileage 124·12, the two southern spans of the Rahidar bridge (four spans of 40-foot girders), together with the abutment and pier as well as 220 feet of bank behind the abutment, were washed away. From mileage 125·4 to mileage 125·17 just beyond Supedi station, the line was completely wrecked; at mileage 125 a 20-foot girder span was lifted off its abutments, but happily neither the girders nor the abutments were

injured, and all the girders of the Utávli bridge (five spans of 40-foot girders) were washed away. From mileage 126·10 to 127·8 the bank was more or less completely demolished.

JETALSAR-RAJKOT RAILWAY (METRE GAUGE).

15. This being a new line, the heavy rain damaged the banks which had not had time to get consolidated. There was also a washaway of 100 feet at the 8th mile, but none of the bridges were damaged. The section had to be closed to public traffic between the 19th and 29th June.

CHAPTER XIV.

ACCIDENTS.

The following statement shows the total number of persons killed and injured in connexion with railway working during 1893 as compared with the average of the two previous years:—

STATEMENT No. 40.

Year.	Passengers.						Servants.					
	From Accidents to Trains, Rolling-stock, Permanent-way, &c.		By Accidents from other Causes, including Accidents from their own want of Caution or Misconduct.		Total.		From Accidents to Trains, Rolling-stock, Permanent-way, &c.		By Accidents from other Causes, including Accidents from their own want of Caution or Misconduct.		Total.	
	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.
1893 -	51*	86	63	184	114	270	6	76	162	525	168	601
Average of the two previous years.	32	88	60	176	92	264	23	71	174	559	197	630

Year.	Other Persons.										Total all Classes.	
	Whilst passing over Railways at Level Crossings.		Trespassers.		Suicides.		Miscellaneous, not included in preceding Columns.		Total.		Killed.	Injured.
	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.		
1893 -	12	8	255	95	70	5	7	5	344	113	626	984
Average of the two previous years.	20	15	249	82	60	2	16	14	345	113	634	1,007

* The increase in the number of passengers killed is due to the accident of the 9th November 1893 on the Nilgiri branch of the Madras Railway referred to in paragraph 9 of this chapter.

The following paragraphs give a brief account of the principal accidents which occurred during the year:—

EAST INDIAN RAILWAY SYSTEM (STANDARD GAUGE).

2. On the 20th February, at Bankipore, a hackney carriage which had its wheels caught in the lines at the level-crossing was struck by a mail train. Both horses were killed and the conveyance smashed.

On the 18th March, at Seoraphuli, owing to the points not having been locked before a Tarkessur railway train was signalled to back, the brake-van and two third-class carriages were derailed, the two rear vehicles capsizing. There was no injury to persons, but the damage to stock was estimated at Rs. 2,000, and the train service was disorganised for nearly twenty-four hours, resulting in very serious detentions to trains.

On the 4th October, between Jehanabad and Mukhdumpur, a down mixed train ran into some large stones, and broke the cattle-fender of the engine. It was discovered that the obstruction had been placed across both the up and down lines. No further damage was done, and the perpetrators could not be traced.

On the 14th October, as an up passenger train was about to leave Bariarpur station, 17 passengers were injured by the explosion of some detonating fireworks which were being surreptitiously carried in a passenger's personal luggage. Six of the injured passengers, including the man who was alleged to have caused the accident, subsequently died of their injuries.

On the 22nd November, between Mokameh station and Ghát, a down train ran over a buffalo, and its front brake-van was derailed and considerably damaged, causing three hours' detention to the train. Most of the passengers walked into Mokameh station, a distance of about $1\frac{1}{2}$ miles, no person having been injured.

On the 29th November, owing to points having been wrongly set, a branch mixed train to Dígha Ghát when leaving Bankipore station ran into a siding instead of taking the branch line, and collided with the dead buffer, knocking it down as also the branch distant-signal. Three waggons were derailed and four others damaged. A starting signal has since been provided at the points.

On the 19th December, at mile $137\frac{1}{2}$, between Rampore Haut and Nalháti a trolly was run over by a light engine, and the Inspector of Works, who was using the trolly, was seriously injured.

BENGAL-NÁGPUR RAILWAY (STANDARD GAUGE).

3. On the 11th June 1893, the roof lamp of a third-class carriage on a down mail train exploded between Biláspur and Párághát stations. A passenger in attempting to walk along the footboards to report the accident to the guard fell off the train and died from the injuries received.

NORTH-WESTERN (STATE) RAILWAY (STANDARD GAUGE).

4. On the 27th June, a trolly was run into by a down ballast train in No. 13 tunnel in the Chupper rift between Mangi and Dirgi stations. The trolly was smashed and one of the trollymen was slightly injured. The accident is attributed to the want of precautions on the part of the trolly staff and to the carelessness of the staff on the engine in not keeping a sharp look-out.

On the 4th July, while a double engine ballast train was shunting in Mandra yard, the drawbar hook and side chains of a truck broke and the train parted. The rear portion, consisting of 19 vehicles, went down an incline towards Riwát, and then running for some distance up an ascending grade commenced to roll back, and when about a mile out of Mandra collided with the rest of the train, which was being taken out by the guard to pick up the runaway portion. The rolling-stock was considerably damaged and a railway servant was slightly injured.

On the 3rd August a sub-platelay's trolly was overtaken and run into by a down mail train between Bagátora and Laki; one trollyman was killed.

On the 1st November, the down mail from Lahore was turned on to the third line at Beas east bank through the carelessness of the traffic staff, and collided with seven trucks standing on the line. The engine and one brake-van of the mail train were damaged and derailed, and two trucks were smashed and one damaged. The train was worked by another engine after a detention of 4 hours and 15 minutes. The assistant station-master and the jemadar were prosecuted. The former was sentenced to two months' imprisonment and a fine of Rs. 100, and the latter to 15 days' imprisonment and a fine of Rs. 10.

ODDH AND ROHILKHAND (STATE) RAILWAY (STANDARD GAUGE).

5. On the 16th April, a down local train collided with an up goods train, which was standing at Goshainganj foul of the crossing. The axle-boxes of two waggons were broken, and the brake-van of the up goods train damaged. There was no injury to the passengers or the staff.

On the 20th December, while an up mixed passenger train was moving out of Moradabad on the station line, the shunting engine which was standing on the main line with three vehicles attached moved ahead and collided with the goods portion of the mixed train at the cross-over, knocking over three waggons and entirely blocking the line.

EASTERN BENGAL (STATE) RAILWAY (STANDARD GAUGE).

6. On the 25th February, a down passenger train in entering the Sealdah station collided with the dead buffer at the end of the down passenger platform. The buffer was damaged, and two European and four Native passengers were slightly injured.

On the 3rd July, a guard was killed at Goalundo by being crushed between a brake-van and a horse loading platform.

On the 10th July, two carriages which had been slipped from an up passenger train, as usual, outside the Belghuriah station collided with other carriages on the train, which suddenly came to a stand at the station. One or two passengers were slightly bruised.

GREAT INDIAN PENINSULA RAILWAY (STANDARD GAUGE).

7. On the 21st February, at Ambernáth, an up goods train ran into and collided with a down goods train owing to the driver of the former running past signals at danger. When the collision occurred, the down train parted between the 8th and 9th vehicles, and the rear portion of the train ran back 150 yards to just beyond the down distant-signal. The permanent-way was slightly damaged, and the damage to rolling-stock was estimated at Rs. 7,000.

On the 20th March, at mile 393, south-east line, near Yádgiri, the engine of a down passenger train failed owing to a tube having burst behind the exhaust pipe. In connection with this failure, the engine of No. 1 down goods was sent down to the scene of the accident to work the passenger train; and while this engine was pulling the train to Yádgiri, the disabled engine, which was the front vehicle, ran into a trolley at mile 395. The trolley, which was in charge of a permanent-way inspector, was proceeding to the scene of the first accident, but was not properly protected by signals. A trolley-man was killed and the permanent-way inspector and a fireman injured. The trolley was smashed, but the engine was only slightly damaged.

On the 24th July, at mile 111, near Devláli, the rear brake and seven waggons of a ballast train were thrown off the line down the bank through coming in contact with a masonry inspector's trolley. The accident was due to the excessive speed of the train and to the failure of the engine staff to see and act promptly on the guard's signal. Two ballast coolies were killed and 37 other coolies, together with the guard of the train, were injured. The telegraph posts were broken, and the line was interrupted for some hours.

BOMBAY, BARODA, AND CENTRAL INDIA RAILWAY (STANDARD GAUGE).

8. On the 4th October, at Sanján, a down mixed train, while being received on the station loop, was derailed at the south points owing to the points opening suddenly through the defective working of the lever gearing. The permanent-way and eight waggons were damaged.

MADRAS RAILWAY (STANDARD GAUGE).

9. On the night of the 9th November, at mile $\frac{320}{10}$, between Periyanaikanpalayam and Karaimadai on the Nilgiri branch, the Periyapallam river, which flows alongside the line, suddenly rose to an unprecedented height and dammed back a tributary stream which discharges itself through a 20-foot girder bridge at mile $\frac{320}{7}$. The water thus ponded back flowed parallel to the embankment until it came to the lowest point on the gradient at mile $\frac{320}{10}$, where it washed away the ballast and left the rails suspended for about 160 feet. The $\frac{6}{45}$ passenger train from Madras to Mettupálaiyam ran into the breach, and all but the three last carriages were derailed and telescoped, six coaching vehicles, one post office half standard van, one brake-van, and four goods waggons being completely smashed. In this unfortunate accident 39 passengers were killed and 52 injured, of whom 5 subsequently died. No blame could be imputed to the railway servants.

RAJPUTANA-MALWA RAILWAY (METRE GAUGE).

10. On the 8th May, at Sirsa, during a heavy storm an empty low-sided waggon, which was placed in the coal siding, was blown out of it over three locked points and one locked scotch-block through the station-yard on to the main line, and collided with a down mail train. The pointsmen at both ends of the yard made every effort to stop the truck, but, owing to the heavy wind and the dust, were not successful. The waggon and the mail engine were damaged.

SOUTHERN MAHRATTA RAILWAY SYSTEM (METRE GAUGE).

11. On the 20th March, at Bangalore city, on the Mysore section, while some waggons were being shunted, a rake of 12 waggons was, through the neglect of the traffic staff, wrongly allowed to run on the main line instead of into the catch siding. The whole rake ran on towards Kengeri. About half way the six rear vehicles were derailed. This derailment caused the six front vehicles to part from the derailed ones. They ran on to Kengeri, where the station-master, who was apprised of their approach, put a sleeper in their way and derailed them. Permanent-way and rolling-stock were damaged.

On the 25th May, while an up mixed train was passing mileage 102, Bijapur branch, the fourth waggon from the engine was derailed. The driver immediately applied the hand and steam brakes and reversed the engine, with the result that the tender, one covered goods waggon, one third-class carriage, and both brake-vans were derailed. The cause of the first derailment is doubtful, but the second is attributed to the driver checking the train too suddenly. Rolling-stock and permanent-way were somewhat damaged.

On the 29th May, at mile 48, main line, between Mugad and Kambárganvi, the engine, tender, and 10 waggons of an up goods train were derailed, and three waggons capsized. The derailment is supposed to have been due to one of the waggon springs falling out.

On the 30th August, at mile 22, main line, between Devarayi and Londa, a covered goods waggon on an up mixed train was derailed through the breakage of one of its axles, due to a flaw in the metal. The waggon and permanent-way were slightly damaged.

SOUTH INDIAN RAILWAY (METRE GAUGE).

12. On the 12th September a buffalo was run over by a mail train at mile 392. The engine water-tank, front brake-van, and six carriages were derailed, the water-tank, brake-van, and three carriages being thrown on their sides. Two passengers and three railway servants were slightly injured.

On the 18th September, owing to the issue of a false line-clear message, two goods trains met between Manaparai and Vaiyampati stations, but were brought to a stand without any damage being done.

On the 3rd October a third-class carriage on a mixed train when near mile 347 left the rails where the ballast had been removed from the sleepers, causing the further derailment of a brake-van. Considerable damage was done to the rolling-stock. The accident is believed to have been due to the super-elevation having been taken out in one rail length, and to excessive side-play of the axle brasses of the third-class carriage. There was no injury to passengers or staff.

On the 3rd December, owing to the issue of a false line-clear message, a mail train met a special train of empty coaching stock in the section between Pallavaram and Vandalúr stations. The trains were stopped 2,000 feet from each other, no damage being done.

BURMA (STATE) RAILWAY (METRE GAUGE).

13. On the 20th February a down mail collided with an up mixed train, which was standing on the station platform line at Thabyedaung, owing to the points being wrongly set and the driver of the mail running above proper speed. The mail train was detained for $3\frac{1}{2}$ hours and the mixed train for $8\frac{1}{2}$ hours. Considerable damage was caused to stock, while the driver and guard of the mail and seven native passengers received slight injuries.

DIBRU-SADIYA RAILWAY (METRE GAUGE).

14. On the 16th October a wild elephant was run over by an up goods train between Makum junction and Digboi. The engine and eleven high-sided waggons were derailed, and the line was blocked for about 24 hours.

JODHPORE-BICKANEER RAILWAY (METRE GAUGE).

15. On the night of the 10th September, while the engine of the down mixed train was detaching some waggons in a siding at Luni junction, the up local ran

into the station against signals 10 minutes before time, and collided with the engine of the down mixed. Seven waggons were damaged and some of the engine staff received slight injuries. The driver and fireman of the local were prosecuted and sentenced, the former to eight and the latter to two month's imprisonment.

MORVI RAILWAY (2' 6" GAUGE).

16. On the 3rd October, the engine and tender, one waggon, one lower class carriage, and one upper class carriage of the up mail train were derailed on a curve of 850 feet radius, on a falling gradient of 1 in 150, at mile 55 between Sindhavadar and Vankaner stations on the Rajkot branch. The accident is supposed to have been due to the sleepers not being properly packed. Rolling-stock and permanent-way were slightly damaged.

ACCIDENTS TO TRAINS.

17. The following table shows the total number of accidents to trains, rolling-stock, permanent-way, &c., and the casualties resulting therefrom, during 1893, as compared with the average of two previous years:—

STATEMENT No. 41.

Serial No.	Class of Accidents.	Number of Accidents during 1893 as compared with the Average of Two previous Years.						Casualties during 1893.										
		Accidents reported to Local Governments under section 83 of the Indian Railways Act, IX, of 1890.				Other Accidents.		Total.		Number of Passengers and others.		Number of Servants.		Total all Classes.				
		Average of Two previous Years.		Average of Two previous Years.		Average of Two previous Years.		Killed.	Injured.	Killed.	Injured.	Killed.	Injured.					
		1893.	1893.	1893.	1893.	1893.												
1	Collisions between passenger trains, or parts of passenger trains.	5	4	0	1	11	5	—	9	—	5	—	14					
2	Collisions between passenger trains and goods or mineral trains, engines, and vehicles standing foul of the line.	22	6	32	23	54	29	—	—	—	(a) 3	—	3					
3	Collisions between goods trains, or parts of goods trains.	12	7	80	80	92	87	—	4	—	3	—	7					
4	Collisions between light engines	2	1	29	26	31	27	—	—	—	1	—	1					
5	Passenger trains, or parts of passenger trains, leaving the rails.	28	18	70	65	98	83	—	—	—	—	—	—					
6	Goods trains, or parts of goods trains, engines, &c., leaving the rails.	22	15	341	281	363	296	—	—	—	—	—	—					
7	Trains or engines travelling in the wrong direction through points.	5	2	63	75	68	77	—	4	1	5	1	9					
8	Trains running into stations or sidings at too high a speed.	—	2	4	17	4	19	—	6	—	—	—	6					
9	Trains running over cattle on the line	6	6	1,324	1,091	1,880	1,992	—	2	—	3	—	5					
10	Trains running over obstructions on the line	6	6	147	143	155	149	(b) 1	—	4	44	5	44					
11	Trains running through gates at level-crossings	2	—	27	48	59	43	—	—	—	3	—	3					
12	The bursting of boilers of engines	—	—	—	—	—	—	—	—	—	—	—	—					
12(a)	The bursting of tubes, &c., of engines	—	1	120	182	120	183	—	—	—	—	—	—					
13	The failure of machinery, springs, &c., of engines	—	2	444	478	444	480	—	—	—	—	—	—					
14	The failure of tyres	1	2	13	17	14	19	—	—	—	—	—	—					
15	The failure of wheels	—	—	5	9	5	9	—	—	—	—	—	—					
16	The failure of axles	5	1	52	33	57	34	—	—	—	—	—	—					
17	The failure of brake apparatus	—	—	5	5	5	5	—	—	—	—	—	—					
18	The failure of couplings	2	2	194	229	196	231	—	1	—	3	—	4					
19	The failure of tunnels, bridges, viaducts, culverts, &c.	5	3	3	5	8	8	—	—	—	—	—	—					
20	Broken rails	—	—	67	62	67	62	—	—	—	—	—	—					
21	The flooding of portions of permanent-way	23	41	62	81	90	122	44	47	1	3	45	50					
22	Slips in cuttings or embankments	9	8	45	28	54	36	—	—	—	—	—	—					
23	Fire in trains	4	2	161	116	165	118	7	12	—	—	7	12					
24	Fire at stations or involving injury to bridges or viaducts.	2	1	56	37	58	38	(b) 3	—	—	—	2	—					
25	Other accidents	10	9	220	176	239	185	—	1	—	3	—	4					
Total for 1893		—	139	—	4,209	—	4,348	(c) 54	86	6	76	60	162					
Average for the two previous years		—	178	—	4,109	—	4,287	37	95	23	71	60	166					

Compared with the average of the corresponding periods of the two previous years, the mean mileage open was 18,121* miles against 17,303 miles, the train-mileage run amounted to 62,587,856 miles against 60,588,936 miles, and the number of passengers in millions was 135½ against 125. There were seven accidents for every 100,000 train-miles run.

Out of a total of 135½ millions of passengers travelling, 51 passengers were killed and 86 injured by accidents to trains, &c., as classified above. This gives an average of one casualty in 987,321 persons travelling and an average of one in 41 millions of miles travelled.

* Including the Calcutta Port Commissioners, Bengal Doonars, and the West of India Portuguese Railways.

(b) Not passenger(s).

(c) Of these, 3 were not passengers.

(a) Includes one postal employee.

APPENDICES.

	Page.
A.—Additions to open mileage from the 1st April 1893 to the 31st March 1894 - - - - -	200
B.—Extensions of line sanctioned from the 1st April 1893 to the 31st March 1894 - - - - -	201
C.—Gauge and classification of lines and the lengths of lines sanctioned and open for traffic on the 31st March 1894- - - - -	202 to 206
D.—Progress made in the opening of railways year by year from the commencement - - - - -	207 to 215
E.—Length of railways open for traffic at the end of each year from the commencement - - - - -	216 to 223
F.—Total approximate earnings from the 1st January to the 31st March 1894 as compared with the actuals of the corresponding periods of 1892 and 1893 - - - - -	224-225
G.—Principal commodities carried, and the earnings therefrom, during the year 1893 as compared with the previous year - - - - -	226 to 239
H.—Schedule of railways recently surveyed or lately put forward for consideration - - - - -	240

INDEX.

Index of Contents - - - - -	241 to 256
-----------------------------	------------

APPENDIX A.—ADDITIONS to open MILEAGE from the 1st April 1893 to the 31st March 1894.

Serial Number.	Railway and Section.	Length in Miles.	Date of Opening.	Remarks.
Standard Gauge.				
STATE LINE WORKED BY COMPANY.				
V.	Godhra-Rutlam— Limkhérá to Dóhad - - -	20	7th March 1894 -	Passenger and goods traffic.
STATE LINES WORKED BY THE STATE.				
XI.	Oudh and Rohilkhand (State)— Lucknow to Rae Bareli - - -	48½	16th October 1893 - 26th October 1893 -	Goods traffic. Passenger traffic.
XV.	East Coast (State)— Kistna Canal Terminus to Bezwada - Rajahmundry (Godávari North) to Vizianagram. - - - Sámalkót to Cocanada - - - Waltair to Vizagapatam - - -	*4 163 9¾ 1¾	1st January 1894 - 20th July 1893 - 21st August 1893 -	Passenger and goods traffic. Goods traffic. Passenger traffic
		178½		
		227		
	Total Standard Gauge - - -	247		
Metre Gauge.				
STATE LINES WORKED BY COMPANIES.				
XXXIII.	Bengal and North-Western (Company's section)— Gogra Ghát to Bahramghát station, Oudh and Rohilkhand (State) Railway.	†6	24th February 1894 -	Goods traffic.
XXXIV.	Rohilkund and Kumaon (Lucknow-Bareilly section):— Sohela to Sonaripur - - -	6½	18th March 1894 -	Goods traffic.
XXXVI.	Pálanpur-Deesa— Pálanpur-Deesa - - -	17¼	8th November 1893 - 25th November 1893 -	Goods traffic. Passenger traffic.
XXXVIII.	Guntakal-Mysore Frontier— Dharmavaram to Hindupur - - - Hindupur to Mysore Frontier - - -	49¼ 7¼	23rd April 1893 - 17th September 1893 -	} Passenger and goods traffic.
		56½		
		86¾		
STATE LINE WORKED BY THE STATE.				
XLIV.	Burma (State)— Meiktila Road to Meiktila Cantonment.	13	10th May 1893 - - -	Passenger and goods traffic.
ASSISTED COMPANY.				
XLVIII.	Bengal Dooars— Lataguri to Ramshai - - -	5½	11th June 1893 - - -	Goods traffic.
LINE OWNED BY NATIVE STATE AND WORKED BY COMPANY.				
LIII.	Yesvantpur-Mysore Frontier— Dodballapur to Mysore Frontier -	31½	17th September 1893 -	Passenger and goods traffic.
LINE OWNED AND WORKED BY NATIVE STATE.				
LVII.	Jetatsar to Rájkot— Jetalsar to Rájkot - - -	46½	12 April 1893 - - -	Passenger and goods traffic.
	Total Metre Gauge - - -	182½		
Special Gauge.				
LINE OWNED BY NATIVE STATE AND WORKED BY STATE RAILWAY AGENCY.				
LXV.	Cooch Behar (2' 6")— Gitaldaha to Torsá River - - -	22½	15th September 1893 - 1st March 1894 -	Goods traffic. Passenger traffic.
	Total Special Gauge - - -	22½		
	GRAND TOTAL - - -	451¾		

* This section is laid on a mixed standard and metre gauge. The length opened on 1st January 1894 was for metre gauge.

† Fair weather line.

APPENDIX B.—EXTENSIONS of LINE sanctioned from the 1st April 1893 to the 31st March 1894.

Serial Number.	Railway and Section.	Length in Miles.	Date of Sanction.	Remarks.
	<i>Standard Gauge.</i>			
	STATE LINE WORKED BY COMPANY.			
I.	East Indian— Damoodur Branch - -	10	15th January 1894.	
III.	Indian Midland— Bina Station to junction with Bina-Guna Railway.	$1\frac{1}{2}$	5th June 1893.	
	Total Standard Gauge -	$11\frac{1}{2}$		
	<i>Metre Gauge.</i>			
	STATE LINES WORKED BY COMPANIES.			
XXXIII.	Bengal and North-Western (Company's section)— Gogra Ghát to Bahramghat station, Oudh and Rohilkhand (State) Railway.	6	19th October 1893.	
XXXIV.	Rohilkund and Kumaon (Lucknow-Bareilly section)— Dudhwa to Sonaripur - -	$4\frac{1}{2}$	2nd November 1893.	
	Grain siding at the Bareilly Junction station.	$1\frac{3}{4}$	24th March 1892 -	Omitted from sanctions for 1891-92.
		6		
		12		
	LINES OWNED AND WORKED BY NATIVE STATES.			
LVII.	Jetalsar-Rájkot— Rájkot Cantonment on Jetalsar-Rájkot Railway to Rájkot on Morvi Railway.	$\frac{1}{2}$	2nd January 1894.	
LVIII.	Oodeypore-Chitor— Oodeypore to Chitor - -	$60\frac{1}{2}$	26th August 1893.	
LIX.	Rájkot-Jamnagar— Rájkot-Jamnagar with branch to Port Jodiya.	*70	14th October 1893 -	* Provisionally sanctioned pending result of a preliminary survey.
		131		
	Total Metre Gauge - -	143		
	GRAND TOTAL OF RAILWAYS - -	$154\frac{1}{2}$		
	Steam tramways outside municipal limits— Powayan (2' 6" gauge) Kotar to Mailáni.	$8\frac{1}{2}$	March 1893.	

APPENDIX C.—STATEMENT showing the GAUGE and CLASSIFICATION of LINES and the

Serial Number.	Railway.	Name of Working Agency.	Date of First Opening for Traffic.	SANCTIONED	
				At the end of 1892-93 as shown in last Report.	Sanctioned during 1892-93 (Appendix B.)
	<i>Standard Gauge.</i>			Miles.	Miles.
STATE LINES WORKED BY COMPANIES.					
I.	East Indian	East Indian Railway Company	15th August 1854	1,679½	10
II.	Bengal-Nagpur	Bengal-Nagpur Railway Company	6th April 1880	861½	—
III.	Indian Midland	Indian Midland Railway Company	1st April 1886	677½	1½
IV.	Bhopal-Idar (British Section)	Indian Midland Railway Company	1st June 1882	13	—
V.	Godhra-Rathbari	Bombay, Baroda, and Central India Railway Company.	16th January 1893	115½	—
VI.	Wardha Coal	Great Indian Peninsula Railway Company.	1st February 1874	45	—
VII.	Dhond-Mannad	Great Indian Peninsula Railway Company.	15th March 1878	145½	—
VIII.	Howwada Extension	Nizam's Guaranteed State Railways Company.	10th February 1889	(c) 112½	—
	Total	—	—	3,650	11½
STATE LINES WORKED BY THE STATE.					
IX.	North-Western (State)	—	13th May 1861	2,427½	—
X.	Hyderabad-Ummerkot	North-Western (State) Railway	18th August 1892	77½	—
XI.	Oudh and Rohilkhand (State)	—	23rd April 1867	900½	—
XII.	Eastern Bengal (State)	—	2nd January 1862	248½	—
XIII.	Bengal Central (S)	Eastern Bengal (State) Railway	16th October 1882	125	—
XIV.	Calcutta Port Commissioners	Port Trust, Calcutta	1st November 1875	6½	—
XV.	East Coast (State)	—	20th February 1893	430½	—
XVI.	Mushkur-Bolan	North-Western (State) Railway	—	85½	—
XVII.	Mari-Attock	North-Western (State) Railway	—	85	—
	Total	—	—	4,386½	—
LINES WORKED BY GUARANTEED COMPANIES.					
XVIII.	Great Indian Peninsula	—	18th April 1853	1,286½	—
XIX.	Bombay, Baroda, and Central India	—	10th February 1890	460½	—
XX.	Madras	—	1st July 1856	839½	—
	Total	—	—	2,586½	—
ASSISTED COMPANIES.					
XXI.	Delhi-Umballa-Katka	East Indian Railway Company	1st March 1891	161½	—
XXII.	Tarkoosur	East Indian Railway Company	1st January 1885	22½	—
	Total	—	—	183½	—
LINES OWNED BY NATIVE STATES AND WORKED BY COMPANIES.					
XXIII.	Khangraon	Great Indian Peninsula Railway Company.	4th March 1870	7½	—
XXIV.	Amroht	Great Indian Peninsula Railway Company.	16th February 1871	5½	—
XXV.	Bhopal-Idar (Native State Section)	Indian Midland Railway Company	18th November 1884	44	—
XXVI.	The Nizam's Guaranteed State	The Nizam's Guaranteed (State) Railway Company.	9th October 1874	329½	—
XXVII.	The Gaekwar's Peshwa	Bombay, Baroda, and Central India Railway Company.	5th May 1890	13½	—
XXVIII.	Kols Gold Fields	Madras Railway Company	—	10	—
	Total	—	—	499½	—
LINES OWNED BY NATIVE STATES AND WORKED BY STATE RAILWAY AGENCY.					
XXIX.	Rajpura-Bhatinda	North-Western (State) Railway	1st November 1884	108	—
XXX.	Jammu and Kashmir (Native State Section)	North-Western (State) Railway	15th March 1890	16	—
	Total	—	—	124	—
LINES OWNED AND WORKED BY NATIVE STATES.					
XXXI.	Rina Guwa	Gwalior Darbar	—	73½	—
XXXII.	Bhopal-Ujjain	Gwalior Darbar	—	113	—
	Total	—	—	186½	—
	Total Standard Gauge	—	—	11,526½	11½

LENGTHS of LINES sanctioned and open for Traffic on the 31st March 1894.

MILEAGE.		OPEN MILEAGE.				Length laid with Two or more Tracks.	Length remaining to be finished.	Remarks.
Corrections of Mileage.	Total sanctioned Length at end of 1893-94.	On the 31st March 1893, as shown in last Report.	Opened during 1893-94 (Appendix A.)	Corrections of Mileage.	Total open Length on the 31st March 1894.			
Miles.	Miles.	Miles.	Miles.	Miles.	Miles.	Miles.	Miles.	
-1	(a) 1,688½	1,613½	—	+½	(b) 1,613½	474½	74½	(a) Including the late Nalhāti and the Patna-Gya State Railways, incorporated with effect from the 1st April and the 1st July 1892 respectively. The conversion of the Nalhāti State Railway (now known as the Azimganj Branch of the East Indian Railway) from the 4' gauge to the standard gauge was completed on the 1st July 1892.
—	861½	861½	—	—	861½	—	—	(b) Including three miles of the Jherriah extension worked for coal traffic only.
—	678½	677½	—	—	677½	—	1½	
—	13	13	—	—	13	—	—	
—	115½	25	20	—	45	—	70½	
—	45	45	—	—	45	—	—	
—	145½	145½	—	—	145½	—	—	
-91	21½	(c) 112½	—	-91	21½	—	—	(c) Including the Bezwa-da-Godávári section of the East Coast (State) Railway (91 miles) re-transferred from 1st January 1894 to "State lines worked by the State." See Serial No. XV.
-92	3,569½	3,409½	20	-90½	3,422½	474½	146½	
—	2,427½	2,427½	—	—	2,427½	42½	—	(d) In abeyance.
(d) -18½	59	59	—	—	59	—	—	
(e) -103½	797	692½	48½	—	741	—	56	(e) Rae Bareilly to Jaunpur withdrawn from sanctioned mileage owing to proposed alteration of alignment to Benares instead of to Jaunpur.
—	248½	248½	—	—	248½	55	—	(f) Although for convenience classed amongst State railways, this line is the property of the Bengal Central Railway Company.
—	125	125	—	—	125	—	—	(g) See note (c) above.
—	6½	6½	—	—	6½	5½	—	
(g) +91	521½	—	178½	(g) +91	269½	—	262	
—	85½	—	—	—	—	—	85½	Under construction.
-5	80	—	—	—	—	—	80	Under construction.
-36	4,350½	3,558½	227	+91	3,876½	102½	473½	
—	1,286½	1,286½	—	—	1,286½	462	—	
—	460½	460½	—	—	460½	60	—	
—	839½	839½	—	—	839½	42½	—	
—	2,586½	2,586½	—	—	2,586½	564½	—	
—	161½	161½	—	—	161½	—	—	
—	22½	22½	—	—	22½	—	—	
—	183½	183½	—	—	183½	—	—	
—	7½	7½	—	—	7½	—	—	
—	5½	5½	—	—	5½	—	—	
—	44	44	—	—	44	—	—	
{ 2½ + ½ }	332½	329½	—	{ 2½ + ½ }	332½	—	—	
—	13½	13½	—	—	13½	—	—	
—	10	—	—	—	—	—	10	Under construction.
+3	412½	399½	—	+3	402½	—	10	
—	108	108	—	—	108	—	—	
—	16	16	—	—	16	—	—	The British section of this railway forms an integral part of the North-Western (State) Railway.
—	124	124	—	—	124	—	—	
—	73½	—	—	—	—	—	73½	Under construction.
+1	114	—	—	—	—	—	114	Under construction.
+1	187½	—	—	—	—	—	187½	
-12½	11,414½	10,345½	247	+3½	10,596½	1,141½	818	

APPENDIX C.—STATEMENT showing the GAUGE and CLASSIFICATION of LINES and the

Serial Number.	Railway.	Name of Working Agency.	Date of First Opening for Traffic.	SANCTIONED	
				At the end of 1892-93 as shown in last Report.	Sanctioned during 1892-93 (Appendix B.)
	<i>Metre Gauge.</i>			Miles.	Miles.
XXXIII.	STATE LINES WORKED BY COMPANIES. Bengal and North-Western— Tirhoot Section	Bengal and North-Western Rail- way Company	1st November 1875 -	341½	—
	Company's Section		2nd April 1884 -	414½	6
XXXIV.	Rohilkund and Kumaon (Lucknow-Bareilly Section).	Rohilkund and Kumaon Railway Company.	12th October 1884 -	224½	6
XXXV.	Rajputana-Malwa	Bombay, Baroda, and Central India Railway Company.	14th February 1873 -	1,874	—
XXXVI.	Palanpur-Deesa	Bombay, Baroda, and Central India Railway Company.	8th November 1893 -	17½	—
XXXVII.	Southern Mahratta	Southern Mahratta Railway Co.	24th March 1884 -	1,043½	—
XXXVIII.	Guntakal-Mysore Frontier	Southern Mahratta Railway Co.	1st March 1892 -	119½	—
XXXIX.	Southern Mahratta (Mysore Section)	Southern Mahratta Railway Co.	1st February 1881 -	382½	—
XL.	South Indian	South Indian Railway Company	15th July 1861 -	1,042½	—
XLI.	Assam-Bengal	Assam-Bengal Railway Company	—	742½	—
XLII.	Máyavaram-Mutpet	South Indian Railway Company	—	58½	—
	Total,	—	—	6,036	12
XLIII.	STATE LINES WORKED BY THE STATE. Eastern Bengal (State)— Northern and Behar Sections (including the Kaunia-Dharila, 2' 6" gauge, Branch). Dacca Section -	—	28th August 1877 -	478	—
		—	4th January 1885 -	86	—
XLIV.	Burma (State)	—	2nd May 1877 -	571½	—
XLV.	Mu Valley	Burma (State) Railway	1st July 1891 -	315½	—
	Total	—	—	1,450½	—
XLVI.	ASSISTED COMPANIES. Deoghur	—	23rd December 1882	4½	—
XLVII.	Rohilkund and Kumaon (Company's Section)	—	12th October 1884 -	54	—
XLVIII.	Bengal Doears	Messrs. Finlay, Muir, and Co.	15th January 1893 -	39	—
XLIX.	Dibru-Sadiya	Assam Railways and Trading Co.	October 1882 -	77½	—
L.	Nilgiri	—	—	16½	—
	Total	—	—	191½	—
LI.	LINES OWNED BY NATIVE STATES AND WORKED BY COMPANIES. The Gaekwar's Mehsana	Bombay, Baroda, and Central India Railway Company.	21st March 1887 -	92½	—
LII.	Kolhapur	Southern Mahratta Railway Co.	21st April 1891 -	29	—
LIII.	Yesvantpur-Mysore Frontier	Southern Mahratta Railway Co.	15th December 1892	—	—
LIV.	Mysore-Nanjangud	Southern Mahratta Railway Co.	1st December 1891 -	—	—
	Total	—	—	121½	—
LV.	LINES OWNED AND WORKED BY NATIVE STATES. Jodhpore-Bikaner— Jodhpore section	Jodhpore Darbar	24th June 1882 -	320½	—
	Bikaner section	Jodhpore Darbar	8th April 1891 -	43½	—
LVI.	Bhánagar-Gondal-Junágarh-Porbandar	Representative Committee of Pro- prietary States.	20th December 1880	(c) 376	—
LVII.	Jetalsar-Rájkot	Bhánagar-Gondal-Junágarh - Por- bandar Railway.	12th April 1893	(f)	—
LVIII.	Oodeypore-Chitor	Meywar State	—	—	60½
LIX.	Rájkot-Jamnagar	Bhánagar-Gondal-Junágarh - Por- bandar Railway.	—	—	70
	Total	—	—	740	131
LX.	FOREIGN LINES. West of India Portuguese	—	17th January 1887 -	51	—
LXI.	Pondicherry	South Indian Railway Company	16th December 1879	7½	—
	Total	—	—	58½	—
	Total metre gauge	—	—	8,599	143
LXII.	<i>Special Gauges.</i> STATE LINE WORKED BY THE STATE. Jorhát (2' 0")	—	15th December 1884	28½	—
LXIII.	ASSISTED COMPANY. Darjeeling-Himalayan (2' 0")	—	23rd August 1880 -	51	—
LXIV.	LINE OWNED BY NATIVE STATE AND WORKED BY COMPANY. The Gaekwar's Dabhoi (2' 6")	Bombay, Baroda, and Central India Railway Company.	8th April 1873 -	71½	—
LXV.	LINE OWNED BY NATIVE STATE AND WORKED BY STATE RAILWAY AGENCY. Cooch Behar (2' 6")	Eastern Bengal (State) Railway	15th September 1893	24½	—
LXVI.	LINE OWNED AND WORKED BY NATIVE STATE. Morvi (2' 6")	Morvi State	11th March 1886 -	94	—
	Total special gauges	—	—	269½	—
	TOTAL OF ALL RAILWAYS	—	—	20,805½	154½
	STEAM TRAMWAYS OUTSIDE MUNICIPAL LIMITS. Cherra-Companyganj (2' 6" gauge).	State Agency	16th June 1886 -	8	—
	Dandot Colliery (2' 0" gauge)	North-Western (State) Railway	1st June 1889 -	3½	—
	Powayan (2' 6" gauge)	Messrs. Lyall Marshall, Managing Agents, Powayan Steam Tramway Company.	17th June 1890	31	8½
	Násik (2' 6" gauge)	Indian Railways Feeder Lines Co.	5th March 1891 -	4½	—
	Thaton-Duyinzáik (2' 6" gauge)	G. E. L. Dawson, Esq.	11th February 1885	8	—
	Tárákeshwar-Mugra (2' 6" gauge)	Bengal Provincial Railway Company	—	80½	—
	Bársi (2' 6" gauge)	Messrs. T. S. Alston, N. W. Wadia, and others.	—	21½	—
	TOTAL	—	—	106½	8½

LENGTHS of LINES sanctioned and open for Traffic on the 31st March 1894—continued.

MILEAGE.		OPEN MILEAGE.				Length laid with Two or more Tracks.	Length remaining to be finished.	Remarks.
Corrections of Mileage.	Total sanctioned Length at end of 1893-94.	On the 31st March 1893, as shown in last Report.	Opened during 1893-94 (Appendix A.)	Corrections of Mileage.	Total open Length on the 31st March 1894.			
Miles.	Miles.	Miles.	Miles.	Miles.	Miles.	Miles.	Miles.	
—	341½	341½	—	—	341½	—	—	(a) Although for convenience classed amongst State railways, the Company's section of this line is the property of the Bengal and North-Western Railway Company.
—	420½	414½	(b) 6	—	420½	—	—	(b) Fair weather line.
—	230½	222½	6½	—½	228½	—	1½	
—	1,674	1,674	—	—	1,674	1½	—	
—	17½	—	17½	—	17½	—	—	
—	1,043½	1,043½	—	—	1,043½	—	—	
—	119½	83	56½	—	119½	—	—	
(c) -66½	296	331½	—	(c) -35½	296	—	—	(c) Now classed with "Lines owned by native States and worked by Companies."
—½	1,041½	1,042½	—	—½	1,041½	—	—	
-2	740½	—	—	—	—	—	740½	Under construction.
+½	5½	—	—	—	—	—	5½	Under construction.
-69½	5,978½	5,132½	86½	-36½	5,182½	1½	796	
+½	478½	478	—	+½	478½	—	—	
—	86	86	—	—	86	—	—	
—	571½	558½	13	—	571½	9	—	
—	315½	159	—	-½	168½	—	168½	Under construction. The open section of this railway forms a part of the Burma (State) Railway system.
+½	1,451	1,281½	13	-½	1,294½	9	160½	
—	4½	4½	—	—	4½	—	—	
—	54	54	—	—	54	—	—	
-2½	36½	27	5½	-½	32½	—	4½	
—	77½	77½	—	—	77½	—	—	
—	10½	—	—	—	—	—	16½	Under construction.
-2½	180½	168½	5½	-½	168½	—	20½	
—	92½	92½	—	—	92½	—	—	
—	29	29	—	—	29	—	—	
(d) +51½	51½	—	31½	(d) +20	51½	—	—	(d) Previously included with the Southern Mahratta Railway (Mysore section).
(d) +15½	15½	—	—	(d) +15½	15½	—	—	
+66½	188½	121½	31½	+35½	188½	—	—	
—	320½	320½	—	—	320½	—	—	(e) Including the Jotalsar-Rajkot Railway, 36½ miles, now entered as a separate undertaking. See Serial No. LVII.
(f) -46½	43½	43½	—	—	43½	—	—	(f) See footnote (e).
(g) +4½	333½	329½	—	(g) +4½	338½	—	—	(g) Including dock estates and quarry lines now shown with open mileage.
+46½	46½	—	46½	—	46½	—	—	Under construction.
—	60½	—	—	—	—	—	60½	Provisionally sanctioned pending the result of a preliminary survey.
—	70	—	—	—	—	—	70	
+4	675	693½	40½	+4½	744	—	131	
—	51	51	—	—	51	—	—	
—	7½	7½	—	—	7½	—	—	
—	58½	58½	—	—	58½	—	—	
-½	8,741½	7,451½	182½	+3	7,630½	10½	1,101½	
-½	28	28½	—	-½	28	—	—	
—	51	51	—	—	51	—	—	
—	71½	71½	—	—	71½	—	—	
-2½	22½	—	22½	—	22½	—	—	
—	94	94	—	—	94	—	—	
-2½	267	245	22½	-½	267	—	—	
-127½	20,422½	18,042	451½	+6½	18,500	1,151½	1,922½	
—	8	8	—	—	8	—	—	
+½	3½	2	1½	—	3½	—	—	
—	39½	31	—	—	31	—	8½	
-4½	—	4½	—	-4½	—	—	—	Removed from the list as the line is worked by horse power.
+½	8½	8	—	-½	8½	—	—	
+½	31	—	—	—	—	—	31	Under construction.
—	21½	—	—	—	—	—	21½	Under construction.
-2½	112½	53½	1½	-½	51½	—	61½	

APPENDIX C.—STATEMENT showing the GAUGE and CLASSIFICATION of LINES, and the LENGTHS of LINES sanctioned and open for Traffic on the 31st March 1894—concluded.

Summary of Totals.	Sanctioned Mileage.				Open Mileage.				Length laid with Two or more Tracks.	Length remaining to be finished.
	At the end of 1892-93.	Sanctioned during 1893-94 (Appendix B.).	Corrections of Mileage.	Total sanctioned Length at the end of 1893-94.	On the 31st March 1893.	Opened during 1893-94 (Appendix A.).	Corrections of Mileage.	Total open length on the 31st March 1894.		
<i>Standard Gauge.</i>	Miles.	Miles.	Miles.	Miles.	Miles.	Miles.	Miles.	Miles.	Miles.	Miles.
State lines worked by Companies -	3,650	11½	- 92	3,669½	3,483½	20	- 90½	3,422½	474½	146½
State lines worked by the State -	4,386½	—	- 36	4,350½	3,558½	227	+ 91	3,876½	102½	473½
Lines worked by Guaranteed Companies.	2,586½	—	—	2,586½	2,586½	—	—	2,586½	564½	—
Assisted Companies -	183½	—	—	183½	183½	—	—	183½	—	—
Lines owned by Native States and worked by Companies.	409½	—	+ 3	412½	399½	—	+ 3	402½	—	10
Lines owned by Native States and worked by State Railway Agency.	124	—	—	124	124	—	—	124	—	—
Lines owned and worked by Native States.	186½	—	+ 1	187½	—	—	—	—	—	187½
Total -	11,526½	11½	- 124	11,414½	10,345½	247	+ 8½	10,596½	1,141½	818
<i>Metre Gauge.</i>										
State lines worked by Companies -	6,036	12	- 69½	5,978½	5,132½	86½	- 36½	5,182½	1½	796
State lines worked by the State -	1,450½	—	+ ½	1,451	1,281½	13	- ½	1,294½	9	156½
Assisted Companies -	191½	—	- 2½	189½	163½	5½	- ½	168½	—	20½
Lines owned by Native States and worked by Companies.	121½	—	+ 66½	188½	121½	31½	+ 35½	188½	—	—
Lines owned and worked by Native States.	740	131	+ 4	875	698½	46½	+ 4½	744	—	131
Foreign lines -	58½	—	—	58½	58½	—	—	58½	—	—
Total -	8,599	143	- ½	8,741½	7,451½	182½	+ 3	7,636½	10½	1,104½
<i>Special Gauges.</i>										
State lines worked by the State -	28½	—	- ½	28	28½	—	- ½	28	—	—
Assisted Companies -	51	—	—	51	51	—	—	51	—	—
Line owned by Native State and worked by Companies.	71½	—	—	71½	71½	—	—	71½	—	—
Line owned by Native State and worked by State Railway agency.	24½	—	- 2½	22½	—	22½	—	22½	—	—
Line owned and worked by Native State.	94	—	—	94	94	—	—	94	—	—
Total -	269½	—	- 2½	267	245	22½	- ½	267	—	—
Total of all railways -	20,395½	154½	- 127½	*20,422½	18,042	451½	+ 6½	18,500	1,151½	1,923½
Steam tramways outside municipal limits.	106½	8½	- 2½	112½	53½	1½	- 4	51½	—	61½

* Made up as follows :—

Length sanctioned at the end of 1892-93 -	Miles.	20,395½
Sanctioned during 1893-94 -	Miles.	154½

20,549¾

Add—

Nizam's Guaranteed State Railway, Trimulgherry troop siding -	Miles.	2¼
Bhánagar-Gondal-Junágarh-Porbandar Railway, Bhánagar dock estates, and Junágarh quarry lines -	Miles.	4½
	Miles.	6¾

20,556½

Deduct—

Hyderabad-Umarkot Railway—Shadipalli to Nara river in abeyance -	Miles.	18½
Oudh and Rohilkhand (State) Railway—mileage from Rae Bareli to Jaunpur withdrawn owing to proposed alteration of alignment to Benares -	Miles.	103½
Corrections of mileage, aggregating -	Miles.	12
	Miles.	134

Net total length sanctioned at the end of 1893-94 -	Miles.	20,422½
Length sanctioned at the end of 1892-93 -	Miles.	20,395½

Increase of mileage in 1893-94 - 27¼

APPENDIX D.

PROGRESS made in the Opening of RAILWAYS Year by Year from the
Commencement.

APPENDIX D.—PROGRESS made in the OPENING of RAILWAYS

Serial No.	Railway.	1873.	1874.	1875.	1876.	1877.	1878.	1879.	1880.	1881.	1882.	1883-84.*								
	<i>Standard Gauge.</i>	Miles.	Miles.	Miles.	Miles.	Miles.	Miles.	Miles.	Miles.	Miles.	Miles.	Miles.								
	STATE LINES WORKED BY COMPANIES.																			
I.	East Indian - - - -	Transferred on 1st January 1880 from "Lines worked by Guaranteed Companies"					—	—	1,504½	—	{ 2½ (a) - ½ }	2½								
	Dildārnagar-Ghāzīpur - -	—	—	—	—	—	—	—	12	—	—	—								
	Patna-Gya - - - -	Transferred from "State Lines worked by the State."					—	—	—	—	—	57 5½ (a) —1 (g) - 3								
	Northern Bengal - - -	—	—	—	—	—	13	—	—	—	—	—								
	Tirhoot - - - -	—	—	—	—	3	—	—	—	—	—	—								
II.	Bengal-Nāgpur - - - -	—	—	—	—	—	—	—	—	—	—	—								
III.	Indian Midland - - - -	—	—	—	—	—	—	—	—	—	—	—								
	Sindia - - - -	Transferred from "State Lines worked by the State."					—	{ 34 32½ }	—	8½	—	—								
	Pātri - - - -	22½	—	—	—	—	—	—	—	—	—	—								
IV.	Bhopal-Itārsi (British Section) -	—	—	—	—	—	—	—	—	—	11½	—								
V.	Godhra-Rutlam - - - -	—	—	—	—	—	—	—	—	—	—	—								
VI.	Wardha Coal - - - -	Transferred from "State Lines worked by the State."					—	—	—	—	—	—								
VII.	Dhond-Manmād - - - -	Transferred from "State Lines worked by the State."					—	—	—	145½	—	—								
	Amritsar-Pathānkot - - -	—	—	—	—	—	—	—	—	—	—	51								
	Rupar-Nālagarh - - - -	—	—	—	—	—	—	—	—	—	—	48								
VIII.	Bezwada Extension - - -	—	—	—	—	—	—	—	—	—	—	—								
	Total - - - -	22½	—	—	—	3	13	66½	1,516½	154	13½	160½								
	STATE LINES WORKED BY THE STATE.																			
	Patna-Gya - - - -	—	—	—	—	—	—	57	—	—	—	(p) - 57								
	Katni-Umaria - - - -	—	—	—	—	—	—	—	—	—	—	—								
	Sindia - - - -	—	—	—	—	—	34	(r) - 34	—	—	—	—								
	Wardha Coal - - - -	—	18½	22½	5½	—	—	—	—	—	—	—								
	Dhond-Manmād - - - -	—	—	—	—	—	145½	—	—	(z) - 145½	—	—								
IX.	North-Western (State) - - -	Including the late Sind, Punjab and Delhi Guaranteed Railway and the Indus Valley, Punjab Northern, and Sind-Pishin State Railways.										—								
X.	Hyderabad-Umarkot - - -	—	—	—	—	—	—	—	—	—	—	—								
	Indus Valley - - - -	—	—	—	—	—	501	—	—	—	—	—								
	Punjab Northern - - - -	Transferred from Metre Gauge.					(bb) 103½	—	67½	130	{ 43½ (a) 8 }	30½ (a) - 8½ }								
	Sind-Pishin (Ruk to Sibi and Pir Chowki) - - - -	—	—	—	—	—	—	—	152	—	—	—								
	Amritsar-Pathānkot - - -	Transferred from "State Lines worked by Companies."					—	—	—	—	—	—								
	Jammu and Kashmir (British Section) - - - -	—	—	—	—	—	—	—	—	—	—	—								
XI.	Oudh and Rohilkhand (State) -	Transferred from "Lines worked by Guaranteed Companies."					—	—	—	—	—	—								
XII.	Eastern Bengal (State) - - -	Transferred from "Lines worked by Guaranteed Companies."					—	—	—	—	—	—								
XIII.	Bengal Central - - - -	Transferred from "Assisted Companies."					—	—	—	—	—	—								
XIV.	Calcutta Port Commissioners' -	—	—	1½	—	—	2	—	½	—	—	—								
XV.	East Coast (State) - - - -	—	—	—	—	—	—	—	—	—	—	—								
	Calcutta and South-Eastern (hk) -	Transferred from "Lines worked by Guaranteed Companies."					—	—	—	—	15	12½								
	Total - - - -	—	18½	24½	5½	—	786	28	220	—15½	66½	— 22½								
		1853.	1854.	1855.	1856.	1857.	1858.	1859.	1860.	1861.	1862.	1863.	1864.	1865.	1866.	1867.	1868.	1869.	1870.	1871.
	LINES WORKED BY GUARANTEED COMPANIES.	Miles.	Miles.	Miles.	Miles.	Miles.	Miles.	Miles.	Miles.	Miles.	Miles.	Miles.	Miles.	Miles.	Miles.	Miles.	Miles.	Miles.	Miles.	Miles.
	East Indian - - - -	—	37½	82½	—	—	19	147	83½	190½	316½	55½	171	23½	—	225½	—	—	—	150½
	Eastern Bengal - - - -	—	—	—	—	—	—	—	—	108	—	4	—	—	—	—	—	—	—	45
	Calcutta and South Eastern - -	—	—	—	—	—	—	—	—	15	13	—	—	—	—	—	—28	Purchased by the		
	Oudh and Rohilkhand - - - -	—	—	—	—	—	—	—	—	—	—	—	—	—	—	42	—	—	—	—
	Sind Punjab and Delhi - - - -	—	—	—	—	—	—	—	109½	32	—	—	208	—	53½	—	218	42½	—	—
XVIII.	Great Indian Peninsula - - -	20½	12½	16½	37½	—	106½	50½	52½	140½	57½	60½	32½	116½	121½	29½	21	—	385	15½
XIX.	Bombay, Baroda, and Central India - - - -	—	—	—	—	—	—	35	99	33½	17½	120½	—	—	—	—	1	½	5	37½
XX.	Madras - - - -	—	—	—	65	15½	15	—	41	160	150½	—	122½	39½	34½	—	32½	29½	76	48½
	South Indian - - - -	—	—	—	—	—	—	—	48½	33½	—	—	—	44½	16½	23½	—	—	—	—
	Total - - - -	20½	50½	99	102½	15½	140½	197½	212½	748½	746	146½	451	387½	200	367½	50	248½	508½	296½

N.B.—The figures in this statement have been revised and corrected up to December 1881 from the statement of railways constructed and in progress

(a) Taken from progress statement for 1882.

(b) Correction of mileage.

(c) Benares branch, taken over from the East Indian Railway.

(d) Campuli branch, closed in 1872 and reopened in 1879.

(e) Patri branch, now included with the Bombay, Baroda, and Central India Railway.

1872.	1873.	1874.	1875.	1876.	1877.	1878.	1879.	1880.	1881.	1882.	1883-84.	1884-85.	1885-86.	1886-87.	1887-88.	1888-89.	1889-90.	1890-91.	1891-92.	1892-93.	1893-94.
Miles.	Miles.	Miles.	Miles.	Miles.	Miles.	Miles.	Miles.	Miles.	Miles.	Miles.	Miles.	Miles.	Miles.	Miles.	Miles.	Miles.	Miles.	Miles.	Miles.	Miles.	Miles.
—	—	—	—	—	—	—	1	—1504½	Transferred on the 1st January 1880 to "State lines worked by Companies".												
—	1½	—	—	—	—	—	—	—	(a) 1½	—	(b) —½	—159½	Transferred on the 1st July 1884 to "State lines worked by the State"								
State on the 1st April 1868, transferred to "State lines worked by the State"																					
251½	163	84	3½	—	—	3	—	—	—	—	—	—	47	{ (b) —1½ 25½ (b) —2½	6½	{ (c) 6 (b) ½	—692½	Transferred on the 1st January 1889 to "State lines worked by the State"			
{ 12½ (d) —7½	—	—	—	—	—	—	{ (a) 7½ (b) —½	—	—	—	—	—	—	—	—	(b) ½	—	Transferred on the 1st January 1886 to the North-Western (State) Railway.			
39½	—	—	16½	1½	9	4½	—	—	—	—	—	—	—	—	—	(f) —32	{ (g) —2 (b) —½ 11½	(e) 29½	—	—	(b) —1½
—	28	—	—	—	—	—	—	—	—	—	{ 17 2½ (b) —½	(b) —½	—	—	—	—	—	—	—	—	—
—	—	—	(h) —79½	—	—	—	(i) 87½	—	—	—	—	—	—	—	—	—	—	—	—	—	—
296	192½	100½	—74½	9	4½	3	—79½	—1504½	1½	20½	23½	—112½	—802½	—25	15½	—670½	1½	—	—	—1½	—

D d

APPENDIX D.—PROGRESS made in the OPENING of

Serial No.	Railway.	1853.	1854.	1855.	1856.	1857.	1858.	1859.	1860.	1861.	1862.	1863.	1864.	1865.	1866.	1867.	1868.	1869.	1870.
	<i>Standard Gauge—cont.</i>																		
	<i>ASSISTED COMPANIES.</i>	Miles.	Miles.	Miles.	Miles.	Miles.	Miles.	Miles.	Miles.	Miles.	Miles.	Miles.	Miles.	Miles.	Miles.	Miles.	Miles.	Miles.	Miles.
XXI.	Delhi-Umballa-Kalka	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
XXII.	Tarkessur	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	Bengal Central	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	<i>Lines OWNED BY NATIVE STATES AND WORKED BY COMPANIES.</i>																		
XXIII.	Khámgaon	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	8
XXIV.	Amrôti	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
XXV.	Bhopal-Itarsi (Native State Section).	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
XXVI.	The Nizam's Guaranteed (State)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
XXVII.	The Gaekwar's Petlad	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	Rájpura-Pátála	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	8
	<i>Lines OWNED BY NATIVE STATES AND WORKED BY STATE RAILWAY AGENCY.</i>																		
XXIX.	Rájpura-Bhátiinda	Transferred from "Lines owned by Native States and worked by Companies."																	
XXX.	Jammu and Kashmir (Native State Section).	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	The Nizam's Guaranteed State	Transferred from "Lines owned by Native States and worked by Companies."																	
	Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	<i>Metre Gauge.</i>																		
	<i>STATE LINES WORKED BY COMPANIES.</i>																		
	Bengal-Nagpur	Transferred from "State lines worked by the State" (late Nagpur-Chhattisgarh (State) Railway)																	
XXXIII.	Bengal and North-Western—Tirhoot section	Transferred on 1st July 1890 from "State lines worked by the State."												—	—	—	—	—	—
	Company's section	Transferred from "Assisted Companies."												—	—	—	—	—	—
XXXIV.	Rohilkund and Kumaon (Lucknow-Bareilly section). (a)	Transferred from Bareilly-Pilibhit and Lucknow-Sitapur-Seramau Railways.																	
	Bareilly-Pilibhit	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	Lucknow-Sitapur-Seramau	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
XXXV.	Rajputana-Malwa	Transferred from "State lines worked by the State."																	
XXXVI.	Palanpur-Deesa	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
X.	Southern Mahratta	Transferred from "Assisted Companies."																	
XXXVIII.	Guntakal-Mysore Frontier	Transferred from the South Indian Railway.																	
XXXIX.	Southern Mahratta (Mysore Section).	Transferred from "Lines owned and worked by Native States."																	
XL.	South Indian	Formerly a Guaranteed Railway. Purchased by Government on the 1st January 1891, and transferred to "State"																	
	Cuddapah-Nellore	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	Bellary-Kistna	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	<i>STATE LINES WORKED BY THE STATE.</i>																		
	Nagpur-Chhattisgarh	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	Tirhoot	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	Rajputana-Malwa	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	92½	—	237
	Punjab Northern	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	North-Western (State)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	Cawnpore-Achnera	Including the Cawnpore-Farukhabad and the Hathras-Muttra-Achnera Railways.																	
	Cawnpore-Farukhabad	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	Hathras-Muttra-Achnera	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	Northern Bengal†	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
XLIII.	Eastern Bengal (State)—Northern and Behar sections (including the Kannia-Dharia, 2' 6" gauge, branch). Dacca Section (n)	Transferred from the "Northern Bengal (State) Railway."																	
XLIV.	Burma (State)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	Toungoo-Mandalay	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
XLV.	Mu Valley	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	92½	—	237

(a) Including the Bareilly-Pilibhit section only up to 1st January 1891, during which time the open length of the Lucknow-Pilibhit section was worked by the Oudh and Rohilkhand (State) Railway.

(b) Including 101½ miles opened during 1885.

(c) Including the Bellary branch of the Madras Railway made over to the Southern Mahratta Railway Company on the 1st February 1887.

(d) Including the late South Indian Guaranteed Railway, 654½ miles, and the Cuddapah-Nellore Railway, 82½ miles.

(e) Included with the open mileage of the Southern Mahratta Railway in Appendix E.

(f) Alteration of route *via* Bajitpur.

(g) Transferred to "State lines worked by Companies" on the 1st July 1890.

(h) Line from Lahore to Jhelum converted to standard gauge, and opened to traffic on that gauge in October 1873.

(i) Salt branch, Lala Musa to Miani.

RAILWAYS Year by Year from the Commencement—continued.

[illegible]

(k) Transferred from Punjab Northern (State) Railway; includes $\frac{1}{2}$ mile due to correction of mileage.
 (l) Superseded by the standard-gauge line from Lāla Mūsa to Bhera; 10 miles, Miani to Khewra, abandoned.
 (m) Metre gauge line, Hirōk to Kōlpur abandoned.
 (n) See Administration Report for 1890-91.
 (o) Including the line from Nagapattam to Trichinopoly (79 $\frac{1}{2}$ miles) converted from standard to metre gauge in June and July 1875.
 (p) Including the line from Trichinopoly to Erode (87 $\frac{1}{2}$ miles) converted from standard to metre gauge in July and December 1879.
 * January 1883 to March 1884. † Including the Kaunia-Dharila (2' 6" gauge) branch.

APPENDIX D.—PROGRESS made in the OPENING OF

Serial Number	Railway.	1865.	1866.	1867.	1868.	1869.	1870.	1871.	1872.	1873.	1874.		
XLVI. XLVII. XLVIII. XLIX.	<i>Metre Gauge.</i>												
	LINE WORKED BY GUARANTEED COMPANY.	Miles.	Miles.	Miles.	Miles.	Miles.	Miles.	Miles.	Miles.	Miles.	Miles.		
	South Indian - - -	17½	—	—	—	—	—	—	—	—	—		
	ASSISTED COMPANIES.												
	Bengal and North-Western -	—	—	—	—	—	—	—	—	—	—		
	Deoghur - - -	—	—	—	—	—	—	—	—	—	—		
	Rohilkund and Kumaon (Com- pany's Section). - - -	—	—	—	—	—	—	—	—	—	—		
	Bengal Dockers - - -	—	—	—	—	—	—	—	—	—	—		
	Dibru-Sadiya - - -	—	—	—	—	—	—	—	—	—	—		
	Southern Mahratta - - -	—	—	—	—	—	—	—	—	—	—		
Total - - -	—	—	—	—	—	—	—	—	—	—			
		1863.	1864.	1865.	1866.	1867.	1868.	1869.	1870.	1871.	1872.	1873.	1874.
	LINE OWNED BY NATIVE STATES AND WORKED BY COMPANIES.												
LI.	The Gaekwar's Mehsana -	—	—	—	—	—	—	—	—	—	—	—	—
LII.	Kolhápúr - - -	—	—	—	—	—	—	—	—	—	—	—	—
LIII.	Yesvantpur-Mysore Frontier -	—	—	—	—	—	—	—	—	—	—	—	—
LIV.	Mysore-Nanjungúd - - -	—	—	—	—	—	—	—	—	—	—	—	—
	Total - - -	—	—	—	—	—	—	—	—	—	—	—	—
	LINE OWNED AND WORKED BY NATIVE STATES.												
LV.	Jodhpore-Bickaneer— Jodhpore Section - - -	—	—	—	—	—	—	—	—	—	—	—	—
	Bickaneer Section - - -	—	—	—	—	—	—	—	—	—	—	—	—
LVI.	Bhāvnagar - Gondal - Junagarh- Porbandar. Mysore - - -	—	—	—	—	—	—	—	—	—	—	—	—
LVII.	Jetalsar-Rájkot - - -	—	—	—	—	—	—	—	—	—	—	—	—
	Total - - -	—	—	—	—	—	—	—	—	—	—	—	—
	FOREIGN LINES.												
LX.	West of India Portuguese -	—	—	—	—	—	—	—	—	—	—	—	—
LXI.	Pondicherry - - -	—	—	—	—	—	—	—	—	—	—	—	—
	Total - - -	—	—	—	—	—	—	—	—	—	—	—	—
	<i>Special Gauges.</i>												
	STATE LINES WORKED BY THE STATE.												
	Nalhāti (4' 0") - - -	Transferred from "Lines worked by Guaranteed Companies."							—	—	27½	—	—
	Cherra-Companyganj (2' 6") -	—	—	—	—	—	—	—	—	—	—	—	—
LXII.	Jorhát (2' 0") - - -	—	—	—	—	—	—	—	—	—	—	—	—
	Total - - -	—	—	—	—	—	—	—	—	—	27½	—	—
	LINE WORKED BY GUARANTEED COMPANY.												
	Nalhāti (4' 0") - - -	27½	—	—	—	—	—	—	—	—	—27½	Purchased by	
	ASSISTED COMPANIES.												
LXIII.	Darjeeling-Himalayan (2' 0") -	—	—	—	—	—	—	—	—	—	—	—	—
	Thatón-Duyinzáik (2' 6") -	—	—	—	—	—	—	—	—	—	—	—	—
	Total - - -	—	—	—	—	—	—	—	—	—	—	—	—
	LINE OWNED BY NATIVE STATE AND WORKED BY COMPANY.												
LXIV.	The Gaekwar's Dabhoi 2' 6" -	—	—	—	—	—	—	—	—	—	—	20	—
	LINE OWNED BY NATIVE STATE AND WORKED BY STATE RAILWAY AGENCY.												
LXV.	Cooch Behar (2' 6") - - -	—	—	—	—	—	—	—	—	—	—	—	—
	LINE OWNED AND WORKED BY NATIVE STATE.												
LXVI.	Morvi (2' 6") - - -	—	—	—	—	—	—	—	—	—	—	—	—
	Total - - -	—	—	—	—	—	—	—	—	—	—	—	—

(a) Including the line from Nogaipatam to Trichinopoly (79½ miles) converted from standard to metre gauge in June and July 1875.

(b) Including the line from Trichinopoly to Erode (87½ miles) July and December 1879.

(c) Correction of mileage.

(d) Transferred to "State Lines worked by Companies."

RAILWAYS Year by Year from the Commencement—continued.

1875.	1876.	1877.	1878.	1879.	1880.	1881.	1882.	1883-4.*	1884-5.	1885-6.	1886-7.	1887-8.	1888-9.	1889-90.	1890-1.	1891-2.	1892-3.	1893-4.
Miles. (a) 175½	Miles. 192½	Miles. 125½	Miles. 12½	Miles. (b) 108	Miles. 15½	Miles. 8	Miles. ½	Miles. (c) 1	Miles. —	Miles. —	Miles. —	Miles. —	Miles. (c) —½	Miles. (c) ½	Miles. —654	Miles. Purchased by Government on the 1st January 1891.	Miles.	Miles.
—	—	—	—	—	—	—	—	—	303	—	73½	—	—	(c) ½	(d) —375½	—	—	—
—	—	—	—	—	—	—	4	1½	—	—1½	½	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	54½	—	—	—	—	—	—	(c) —½	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	27	{ (c) 5½ (e) —½
—	—	—	—	—	—	—	15	23½	39	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	40½	173½	—214	Transferred to "State Lines worked by Companies."						—	—
—	—	—	—	—	—	—	19	65½	570	—215½	74	—	—	—½	—375½	—½	27	5½
1875.	1876.	1877.	1878.	1879.	1880.	1881.	1882.	1883-4.	1884-5.	1885-6.	1886-7.	1887-8.	1888-9.	1889-90.	1890-1.	1891-2.	1892-3.	1893-4.
—	—	—	—	—	—	—	—	—	—	—	21	(c) —½	{ (c) —½ 7½ }	—	40½	24½	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	29	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	{ (c) 31½ +20
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	(c) +15½
—	—	—	—	—	—	—	—	—	—	—	21	—½	7	—	40½	50½	—	66½
—	—	—	—	—	—	—	18½	—	{ 45 (c) ½ }	—	59½	—	—	—	—	123½	73	—
—	—	—	—	—	—	—	—	(c) ½	—	(c) ½	—	—	—	—	—	43½	—	—
—	—	—	—	—	105	87½	—	—	—	—	—	—	{ 66½ (c) —½ }	{ (c) 8½ 70½ }	—	—	—	(c) +½
—	—	—	—	—	—	58	28	1	{ 54 (c) —½ }	{ — (c) —½ }	{ —139½ (c) —½ }	Transferred on the 1st July 1886 to "State Lines worked by Companies."						—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	46½
—	—	—	—	—	105	146½	46½	1½	98½	½	—80½	—	66½	73½	½	167½	73	46½
—	—	—	—	—	—	—	—	—	—	—	41	10	—	—	—	—	—	—
—	—	—	—	7½	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	7½	—	—	—	—	—	—	41	10	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	(f) —27½	—
—	—	—	—	—	—	—	—	—	—	—	7½	—	—	—	—	(c) ½	(g) —8	—
—	—	—	—	—	—	—	—	—	—	—	32½	—3	—2½	{ (c) 1½ 2½ }	{ (h) —5½ 5 }	—	(c) —½	(c) —½
—	—	—	—	—	—	—	—	—	—	—	32½	—3	5	4	—2½	—	—35½	—½
Government on the 31st March 1872, and transferred to "State Lines worked by the State."												—	—	—	—	—	—	—
—	—	—	—	—	30	18½	(c) 1½	—	(c) 1	—	{ (c) —½ ½ }	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	8	—	—	—	—	—	—	—	—8	—
—	—	—	—	—	30	18½	1½	—	9	—	—	—	—	—	—	—	—8	—
—	—	—	—	20½	17	3	—	(c) —1½	—	—	—	—	—	—	13	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	22½
—	—	—	—	—	—	—	—	—	—	24	44	—	—	{ (c) ½ 25½ }	—	—	—	+½
—	—	—	—	—	—	—	—	—	—	24	44	—	—	25½	—	—	—	—

(e) Including the Bareilly-Pilibhit section only up to 1st January 1891, during which time the open length of the Lucknow-Pilibhit section was worked by the Oudh and Rohilkhand (State) Railway.

(f) Incorporated with the East Indian Railway from 1st April 1892.

(h) Baraghop river siding temporarily closed.

* January 1883 to March 1884.

(g) Now treated as a steam tramway.

APPENDIX D.—ABSTRACT of MILEAGES opened

Years.	STANDARD GAUGE.						METRE GAUGE.				
	State Lines worked by Companies.	State Lines worked by the State.	Lines worked by Guaranteed Companies.	Assisted Companies.	Lines owned by Native States and worked by Companies.	Lines owned by Native States and worked by State Railway Agency.	State Lines worked by Companies.	State Lines worked by the State.	Lines worked by Guaranteed Companies.	Assisted Companies.	Lines owned by Native States and worked by Companies.
	Miles.	Miles.	Miles.	Miles.	Miles.	Miles.	Miles.	Miles.	Miles.	Miles.	Miles.
1853	—	—	20 $\frac{1}{2}$	—	—	—	—	—	—	—	—
1854	—	—	50 $\frac{1}{2}$	—	—	—	—	—	—	—	—
1855	—	—	99	—	—	—	—	—	—	—	—
1856	—	—	102 $\frac{3}{4}$	—	—	—	—	—	—	—	—
1857	—	—	15 $\frac{1}{2}$	—	—	—	—	—	—	—	—
1858	—	—	140 $\frac{1}{4}$	—	—	—	—	—	—	—	—
1859	—	—	197 $\frac{3}{4}$	—	—	—	—	—	—	—	—
1860	—	—	212 $\frac{1}{2}$	—	—	—	—	—	—	—	—
1861	—	—	748 $\frac{1}{2}$	—	—	—	—	—	—	—	—
1862	—	—	746	—	—	—	—	—	—	—	—
1863	—	—	146 $\frac{1}{2}$	—	—	—	—	—	—	—	—
1864	—	—	451	—	—	—	—	—	—	—	—
1865	—	—	387 $\frac{1}{4}$	—	—	—	—	—	17 $\frac{1}{2}$	—	—
1866	—	—	200	—	—	—	—	—	—	—	—
1867	—	—	367 $\frac{1}{4}$	—	—	—	—	—	—	—	—
1868	—	28	50	—	—	—	—	—	—	—	—
1869	—	—	248 $\frac{1}{2}$	—	—	—	—	—	—	—	—
1870	—	—	508 $\frac{1}{4}$	—	8	—	—	—	—	—	—
1871	—	—	296 $\frac{1}{2}$	—	6	—	—	—	—	—	—
1872	—	—	296	—	—	—	—	—	—	—	—
1873	22 $\frac{1}{2}$	—	192 $\frac{3}{4}$	—	—	—	—	92 $\frac{1}{4}$	—	—	—
1874	—	18 $\frac{1}{2}$	100 $\frac{3}{4}$	—	121	—	—	237	—	—	—
1875	—	24 $\frac{1}{4}$	-74 $\frac{1}{4}$	—	—	—	—	242 $\frac{1}{2}$	175 $\frac{1}{2}$	—	—
1876	—	5 $\frac{1}{2}$	9	—	—	—	—	111 $\frac{3}{4}$	192 $\frac{3}{4}$	—	—
1877	3	—	4 $\frac{3}{4}$	—	—	—	—	327	125 $\frac{1}{2}$	—	—
1878	13	786	3	—	—	—	—	85 $\frac{1}{2}$	12 $\frac{3}{4}$	—	—
1879	66 $\frac{1}{2}$	23	-79 $\frac{1}{4}$	—	-121	121	—	130 $\frac{1}{4}$	108	—	—
1880	1,516 $\frac{1}{4}$	220	-1,504	—	—	—	—	270 $\frac{3}{4}$	18 $\frac{3}{4}$	—	—
1881	154	-15 $\frac{3}{4}$	1 $\frac{1}{2}$	—	—	—	—	418 $\frac{1}{4}$	8	—	—
1882	13 $\frac{3}{4}$	66 $\frac{1}{4}$	20 $\frac{1}{4}$	20	—	—	—	72 $\frac{3}{4}$	$\frac{1}{2}$	19	—
*1883-84	160 $\frac{1}{4}$	-22 $\frac{1}{2}$	23 $\frac{3}{4}$	94	—	—	—	360 $\frac{3}{4}$	1	65 $\frac{1}{2}$	—
1884-85	-50 $\frac{1}{4}$	178	-112 $\frac{3}{4}$	33 $\frac{1}{4}$	181	-121	1,450	-1,090 $\frac{3}{4}$	—	570	—
1885-86	-59 $\frac{1}{4}$	804	-602 $\frac{1}{2}$	$\frac{1}{4}$	-16	16	315 $\frac{1}{4}$	106 $\frac{3}{4}$	—	-215 $\frac{1}{2}$	—
1886-87	46 $\frac{1}{2}$	447 $\frac{3}{4}$	-25	-125 $\frac{1}{4}$	82 $\frac{1}{2}$	—	731 $\frac{1}{4}$	-250	—	74	21
1887-88	88 $\frac{1}{2}$	326 $\frac{1}{2}$	15 $\frac{3}{4}$	—	69 $\frac{1}{2}$	—	537 $\frac{3}{4}$	-65 $\frac{1}{4}$	—	—	- $\frac{1}{2}$
1888-89	594 $\frac{1}{4}$	647 $\frac{3}{4}$	-670 $\frac{1}{4}$	—	55 $\frac{1}{4}$	—	-72	235 $\frac{1}{4}$	- $\frac{1}{4}$	—	7
1889-90	372 $\frac{3}{4}$	5 $\frac{1}{2}$	1 $\frac{1}{4}$	—	—	108	207 $\frac{1}{2}$	64 $\frac{3}{4}$	$\frac{1}{4}$	- $\frac{1}{2}$	—
1890-91	374 $\frac{3}{4}$	-28 $\frac{1}{4}$	—	162	16 $\frac{1}{4}$	—	1,588 $\frac{1}{2}$	-256 $\frac{1}{2}$	-654 $\frac{1}{2}$	-375 $\frac{3}{4}$	40 $\frac{1}{4}$
1891-92	—	-18 $\frac{3}{4}$	—	$\frac{1}{4}$	—	—	330 $\frac{3}{4}$	58 $\frac{1}{2}$	—	- $\frac{1}{2}$	53 $\frac{3}{4}$
1892-93†	176 $\frac{1}{2}$	62 $\frac{3}{4}$	-1 $\frac{1}{2}$	- $\frac{3}{4}$	—	—	49 $\frac{1}{4}$	135 $\frac{1}{2}$	—	27	—
1893-94†	-70 $\frac{1}{4}$	318 $\frac{1}{4}$	—	—	—	—	50 $\frac{1}{2}$	12 $\frac{1}{2}$	—	5 $\frac{1}{4}$	66 $\frac{3}{4}$

* January 1883 to March 1884.

N.B.—This statement has been revised so as to include corrections of mileage due to transfers from one gauge or class. For details, see pages 208 to 213. The dates of opening of the various sections

during each year from the commencement—concluded

METRE GAUGE.		SPECIAL GAUGES.					SUMMARY.				
Lines owned and worked by Native States.	Foreign Lines.	State Lines worked by the State.	Lines worked by Guaranteed Companies.	Assisted Companies.	Lines owned by Native States and worked by Companies.	Lines owned by Native State and worked by State Railway Agency	Lines owned and worked by Native States.	Standard Gauge.	Metre Gauge.	Special Gauges.	Total.
Miles.	Miles.	Miles.	Miles.	Miles.	Miles.	Miles.	Miles.	Miles.	Miles.	Miles.	Miles.
—	—	—	—	—	—	—	—	20 $\frac{1}{2}$	—	—	20 $\frac{1}{2}$
—	—	—	—	—	—	—	—	50 $\frac{1}{2}$	—	—	50 $\frac{1}{2}$
—	—	—	—	—	—	—	—	99	—	—	99
—	—	—	—	—	—	—	—	102 $\frac{3}{4}$	—	—	102 $\frac{3}{4}$
—	—	—	—	—	—	—	—	15 $\frac{1}{2}$	—	—	15 $\frac{1}{2}$
—	—	—	—	—	—	—	—	140 $\frac{1}{4}$	—	—	140 $\frac{1}{4}$
—	—	—	—	—	—	—	—	197 $\frac{3}{4}$	—	—	197 $\frac{3}{4}$
—	—	—	—	—	—	—	—	212 $\frac{1}{2}$	—	—	212 $\frac{1}{2}$
—	—	—	—	—	—	—	—	748 $\frac{1}{2}$	—	—	748 $\frac{1}{2}$
—	—	—	—	—	—	—	—	746	—	—	746
—	—	—	27 $\frac{1}{2}$	—	—	—	—	146 $\frac{1}{2}$	—	27 $\frac{1}{2}$	173 $\frac{3}{4}$
—	—	—	—	—	—	—	—	451	—	—	451
—	—	—	—	—	—	—	—	387 $\frac{1}{2}$	17 $\frac{1}{2}$	—	404 $\frac{3}{4}$
—	—	—	—	—	—	—	—	200	—	—	200
—	—	—	—	—	—	—	—	367 $\frac{1}{2}$	—	—	367 $\frac{1}{2}$
—	—	—	—	—	—	—	—	78	—	—	78
—	—	—	—	—	—	—	—	248 $\frac{1}{2}$	—	—	248 $\frac{1}{2}$
—	—	—	—	—	—	—	—	516 $\frac{1}{2}$	—	—	516 $\frac{1}{2}$
—	—	—	—	—	—	—	—	302 $\frac{1}{2}$	—	—	302 $\frac{1}{2}$
—	—	27 $\frac{1}{2}$	—27 $\frac{1}{2}$	—	—	—	—	296	—	—	296
—	—	—	—	—	20	—	—	215 $\frac{1}{4}$	92 $\frac{1}{4}$	20	327 $\frac{1}{2}$
—	—	—	—	—	—	—	—	240 $\frac{1}{4}$	237	—	477 $\frac{1}{4}$
—	—	—	—	—	—	—	—	—50	417 $\frac{3}{4}$	—	367 $\frac{3}{4}$
—	—	—	—	—	—	—	—	14 $\frac{1}{2}$	304 $\frac{1}{2}$	—	319
—	—	—	—	—	—	—	—	7 $\frac{3}{4}$	452 $\frac{1}{2}$	—	460
—	—	—	—	—	—	—	—	802	98 $\frac{1}{2}$	—	900 $\frac{1}{2}$
—	7 $\frac{3}{4}$	—	—	—	20 $\frac{1}{2}$	—	—	10 $\frac{1}{2}$	246	20 $\frac{1}{2}$	276 $\frac{1}{2}$
105	—	—	—	80	17	—	—	232	389 $\frac{1}{2}$	47	668 $\frac{1}{2}$
145 $\frac{1}{2}$	—	—	—	18 $\frac{3}{4}$	3	—	—	189 $\frac{1}{2}$	566 $\frac{3}{4}$	21 $\frac{3}{4}$	728
46 $\frac{1}{2}$	—	—	—	1 $\frac{1}{4}$	—	—	—	120 $\frac{1}{2}$	138 $\frac{1}{2}$	1 $\frac{1}{2}$	260
1 $\frac{1}{2}$	—	—	—	—	—1 $\frac{1}{2}$	—	—	255 $\frac{1}{2}$	428 $\frac{3}{4}$	—1 $\frac{1}{2}$	682 $\frac{3}{4}$
98 $\frac{1}{2}$	—	32 $\frac{1}{2}$	—	9	—	—	—	108 $\frac{1}{4}$	1,027 $\frac{3}{4}$	41 $\frac{1}{2}$	1,177 $\frac{1}{4}$
$\frac{1}{4}$	—	—8	—	—	—	—	24	142 $\frac{1}{2}$	206 $\frac{1}{2}$	21	370
—80 $\frac{1}{2}$	41	5	—	—	—	—	44	426 $\frac{1}{2}$	537	49	1,012 $\frac{1}{2}$
—	10	4	—	—	—	—	—	500	482 $\frac{1}{4}$	4	986 $\frac{1}{4}$
66 $\frac{1}{2}$	—	—	—	—	—	—	—	627	236 $\frac{1}{2}$	—	863 $\frac{1}{2}$
73 $\frac{1}{2}$	—	—2 $\frac{1}{4}$	—	—	—	—	25 $\frac{3}{4}$	487 $\frac{1}{2}$	345 $\frac{1}{2}$	23 $\frac{1}{2}$	856 $\frac{1}{2}$
$\frac{1}{4}$	—	—	—	—	13	—	—	524 $\frac{3}{4}$	342 $\frac{1}{4}$	13	880
167 $\frac{1}{4}$	—	$\frac{1}{2}$	—	—	—	—	—	—18 $\frac{1}{2}$	609 $\frac{3}{4}$	$\frac{1}{2}$	591 $\frac{3}{4}$
73	—	—35 $\frac{1}{2}$	—	—8	—	—	—	237 $\frac{1}{4}$	278 $\frac{3}{4}$	—43 $\frac{1}{2}$	472 $\frac{1}{2}$
46 $\frac{1}{2}$	—	— $\frac{1}{4}$	—	—	—	29 $\frac{1}{4}$	$\frac{1}{2}$	247 $\frac{3}{4}$	181 $\frac{1}{2}$	22 $\frac{1}{4}$	451 $\frac{1}{2}$

† Excluding the Cherra-Companyganj and the Thatôn-Duyinzaik Railways now treated as steam tramways, to another and to show reductions caused by the exclusion of lines which have been removed from the list of railways. will be found in Appendix D, Part II, of the Administration Reports.

APPENDIX E.—LENGTH of RAILWAYS open for PUBLIC TRAFFIC at the

Serial Number.	Railway.	1868.	1869.	1870.	1871.	1872.	1873.	1874.	1875.	1876.	1877.	1878.	1879.
	<i>Standard Gauge.</i>	Miles.	Miles.	Miles.	Miles.	Miles.	Miles.	Miles.	Miles.	Miles.	Miles.	Miles.	Miles.
	STATE LINES WORKED BY COMPANIES.												
I.	East Indian	This was a guaranteed line up to the 31st December 1879.							—	—	—	—	—
	Dildárnagar-Gházípur	—	—	—	—	—	—	—	—	—	—	—	—
	Patna-Gya	Transferred on the 1st January 1883 from "State lines worked by the State."							—	—	—	—	—
	Northern Bengal	—	—	—	—	—	—	—	—	—	—	13	13
	Tirhoot	—	—	—	—	—	—	—	—	—	3	3	3
II.	Bengal-Nágpur	Transferred from "State lines worked by the State" (late Nágpur-Chhattisgarh metre gauge State											
III.	Indian Midland	—	—	—	—	—	—	—	—	—	—	—	—
	Sindia	Transferred from "State lines worked by the State."							—	—	—	—	60½
	Pátri	—	—	—	—	—	22½	22½	22½	22½	22½	22½	22½
IV.	Bhopal-Itársi (British Section)	—	—	—	—	—	—	—	—	—	—	—	—
V.	Godhra-Rutlém	—	—	—	—	—	—	—	—	—	—	—	—
VI.	Wardha Coal	Transferred on the 1st January 1881 from "State lines worked by the State."											
VII.	Dhond-Manmád	Transferred from "State lines worked by the State."							—	—	—	—	—
	Amritsar-Patháńkot	—	—	—	—	—	—	—	—	—	—	—	—
	Rupar-Nálagarh (i)	—	—	—	—	—	—	—	—	—	—	—	—
VIII.	Bezwada Extension	—	—	—	—	—	—	—	—	—	—	—	—
	Total	—	—	—	—	—	22½	22½	22½	22½	25½	38½	105
	STATE LINES WORKED BY THE STATE.												
	Patna-Gya	—	—	—	—	—	—	—	—	—	—	—	57
	Katni-Umaria	—	—	—	—	—	—	—	—	—	—	—	—
	Sindia	—	—	—	—	—	—	—	—	—	—	34	Made
	Wardha Coal	—	—	—	—	—	—	(k) 18½	(k) 41	(k) 46½	46½	46½	46½
	Dhond-Manmád	—	—	—	—	—	—	—	—	—	—	145½	145½
IX.	North-Western (State)	Late Sind, Punjab and Delhi, Indus Valley, Punjab Northern, and Sind-Pishin Railways.											
	Indus Valley	—	—	—	—	—	—	—	—	—	—	501	501
	Punjab Northern	Transferred from metre gauge.							—	—	—	103½	103½
	Sind-Pishin (Ruk to Sibi and Pir Chowki)	—	—	—	—	—	—	—	—	—	—	—	—
	Amritsar-Patháńkot	Transferred on the 1st January 1880 from "State lines worked by Companies."											
X.	Hyderabad-Umarkot	—	—	—	—	—	—	—	—	—	—	—	—
	Jammu and Kashmir (British Section)	—	—	—	—	—	—	—	—	—	—	—	—
XI.	Oudh and Rohilkhand (State)	Transferred on the 1st January 1880 from "Lines worked by guaranteed Companies."											
XII.	Eastern Bengal (State)	Transferred on the 1st July 1884 from "Lines worked by guaranteed Companies."											
	Calcutta and South-Eastern	28	28	28	28	28	28	28	28	28	28	28	28
XIII.	Bengal Central	Transferred from "Assisted Companies."							—	—	—	—	—
XIV.	Calcutta Port Commissioners'	—	—	—	—	—	—	—	1½	1½	1½	3½	3½
XV.	East Coast (State)	—	—	—	—	—	—	—	—	—	—	—	—
	Total	28	28	28	28	28	28	46½	70½	70½	76½	802½	886½

(a) Benares branch (6 miles) transferred to the Oudh and Rohilkhand (State) Railway.

(b) Including the Dildárnagar-Gházípur Railway.

(c) Including the late Nalháti and the Patna-Gya State Railways incorporated on the 1st April and the 1st July 1892 respectively.

(d) Incorporated with the East Indian Railway on the 1st July 1892.

(e) Including the late Nágpur-Chhattisgarh State Railway and the Katni-Umaria branch (37 miles) taken over on the 1st April 1888.

(f) Including the Sindia State Railway taken over on the 1st March 1889.

(g) Excluding 14 miles at Warora retained by the colliery as a siding on the transfer of this railway to the Great Indian Peninsula Railway Company.

(h) The section from Rupar to Nálagarh (16 miles) was closed for passenger traffic in July 1883. The whole line was abandoned in July 1884.

(i) Including the Bezwada-Godvári section of the East Coast (State) Railway opened for traffic on the 26th February 1893.

N.B. —This statement has been corrected up to December 1881 from the statement of railways constructed and in progress published in 1882.

mileage. For details of mileage opened year by year, see Appendix D.

end of each YEAR from the Commencement.

1880.	1881.	1882.	1883-84.	1884-85.	1885-86.	1886-87.	1887-88.	1888-89.	1889-90.	1890-91.	1891-92.	1892-93.	Serial Number.
Miles.	Miles.	Miles.	Miles.	Miles.	Miles.	Miles.	Miles.	Miles.	Miles.	Miles.	Miles.	Miles.	Miles.
1,504½	1,504½	1,506½	1,509	1,509	1,514½	1,519½	(a) 1,518½	(b) 1,525½	1,525½	1,525½	1,525½	(c) 1,613½	1,613½
12	12	12	12	12	12	12	12	Incorporated with the East Indian Railway on the 1st January 1889.					
—	—	—	57	57	57½	57½	57½	57½	57½	57½	57½	(d)	—
13	13	13	17½	—	Incorporated with the Eastern Bengal (State) Railway on the 1st July 1884.						—	—	—
3	3	3	—	—	Closed owing to the change of terminus from opposite Barh to opposite Mokameh.						—	—	—
Railway.)	—	—	—	—	—	—	—	(e) 291½	501½	831½	831½	861½	861½
—	—	—	—	—	—	42	13 6½	(f) 514½	677½	677½	677½	677½	677½
66½	74½	74½	74½	74½	74½	74½	74½	Incorporated with the Indian Midland Railway on 1st March 1889.					
23½	22½	22½	22½	22½	22½	22½	22½	Now included with the mileage of the Bombay, Baroda, and Central India Railway.					
—	—	11½	11½	13	13	13	13	13	13	13	13	13	13
—	—	—	—	—	—	—	—	—	—	—	—	25	45
—	—	—	—	—	—	—	—	—	(g) 45	45	45	45	45
—	145½	145½	145½	145½	145½	145½	145½	145½	145½	145½	145½	145½	145½
—	—	—	51	65	Transferred on the 1st January 1886, to "State lines worked by the State."						—	—	—
—	—	—	(h) 43	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	21½	21½	21½	21½	(i) 112½	(j) 21½
1,621½	1,775½	1,789	1,949½	1,899	1,839½	1,886½	1,974½	2,569	2,941½	3,316½	3,316½	3,483½	3,422½
57	57	57	Transferred on the 1st January 1883 to "State lines worked by Companies."						—	—	—	—	—
—	—	—	—	—	—	37	37	Taken over by the Bengal-Nagpur Railway Company on the 1st April 1885.					
over to the East Indian Railway for working on the 10th December 1879.								—	—	—	—	—	—
46½	46½	46½	46½	46½	46½	46½	46½	46½	46½	Transferred to "State lines worked by Companies" on the 1st January 1891.			
145½	Made over to the Great Indian Peninsula Railway for working on the 1st January 1881.						—	—	—	—	—	—	—
—	—	—	—	—	1,765	2,048½	2,374½	2,371	2,368	2,368½	(m) 2,357	(n) 2,427½	2,427½
501	501	501	501	501	Amalgamated with the North-Western (State) Railway on the 1st January 1886						—	—	—
171	301	352½	374½	374½							—	—	—
152	152	152	152	152							—	—	—
—	—	—	—	—	65	65	64½	64½	64½	64½	63½	(o)	—
—	—	—	—	—	—	—	—	—	—	—	—	59	59
—	—	—	—	—	—	—	—	—	8½	8½	(p)	—	—
—	—	—	—	—	—	—	—	692½	692½	692½	692½	692½	741
—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	(q) 233½	234½	234½	234½	231	231	249	248½	248½	248½
23	28	43	55½	Incorporated with the Eastern Bengal (State) Railway on the 1st July 1884.						—	—	—	—
—	—	—	—	—	—	125½	125½	125	125	125	125	125	125
4	4	4	4	4	4	6½	6½	6½	6½	6½	6½	6½	6½
—	—	—	—	—	—	—	—	—	—	—	—	—	269½
1,105½	1,089½	1,155½	1,133½	1,311½	2,115½	2,563	2,889½	3,537	3,542½	3,514½	3,495½	3,552½	3,576½

(j) Excluding the portion of the East Coast (State) Railway referred to under (i) retransferred to the State for working from 1st January 1894.

(k) For coal traffic only; line to mile 45 opened for public traffic in 1877.

(l) For coal traffic only; line to mile 45 opened for public traffic in 1877.

(m) Including Jammu and Kashmir Railway (British section) but excluding portion of the old Quetta loop, 90½ miles, under reconstruction.

(n) Including the Amritsar-Pathankot Railway and 6½ miles of military line not used for public traffic.

(o) Including the Amritsar-Pathankot Railway and 6½ miles of military line not used for public traffic.

(p) Amalgamated with the North Western (State) Railway.

(q) Incorporated with the North Western (State) Railway on the 1st April 1892.

(r) Including 17½ miles of the Northern Bengal, standard gauge line (Poradahr branch) 55½ miles of the Calcutta and South Eastern State Railway, and 166½ miles of the late Eastern Bengal guaranteed Railway.

(s) Transferred from "Lines worked by Guaranteed Companies."

The figures for subsequent years have been corrected from the annual progress statements since published, and include differences due to minor corrections of January 1883 to March 1884.

APPENDIX E.—LENGTH of RAILWAYS open for PUBLIC

Serial Number.	Railway.	1853.	1854.	1855.	1856.	1857.	1858.	1859.	1860.	1861.	1862.	1863.	1864.	1865.	1866.	1867.	1868.	1869.	1870.
	<i>Standard Gauge—cont.</i>	Miles.	Miles.	Miles.	Miles.	Miles.	Miles.	Miles.	Miles.	Miles.	Miles.	Miles.	Miles.	Miles.	Miles.	Miles.	Miles.	Miles.	Miles.
	LINES WORKED BY GUARANTEED COMPANIES.																		
	East Indian	—	37½	120½	120½	120½	139½	286½	370½	560½	877½	933	1,104	1,127½	1,127½	1,353	1,353	1,353	1,353
	Eastern Bengal	—	—	—	—	—	—	—	—	—	108	108	112	112	112	112	112	112	112
	Calcutta and South-Eastern	—	—	—	—	—	—	—	—	—	15	28	28	28	28	28	Purchased by the		
	Oudh and Rohilkhand	—	—	—	—	—	—	—	—	—	—	—	—	—	—	42	42	42	42
	Sind, Punjab, and Delhi	—	—	—	—	—	—	—	—	109½	141½	141½	141½	349½	349½	403½	403½	621½	663½
XVIII.	Great Indian Peninsula	20½	33½	49½	87½	87½	193½	244½	297	437½	495	555½	587½	704	825½	854½	875½	875½	1,260½
XIX.	Bombay, Baroda, and Central India	—	—	—	—	—	—	—	35	134	167½	185	305½	305½	305½	305½	306½	307½	312½
XX.	Madras	—	—	—	65	80½	95½	95½	136½	296½	446½	446½	569½	609	643½	643½	675½	705½	751½
	South Indian	—	—	—	—	—	—	—	—	48½	81½	81½	81½	81½	126½	143	166½	166½	166½
	Total	20½	71	170	272½	288½	428½	626½	838½	1,587	2,333	2,479½	2,930½	3,317½	3,517½	3,885	3,935	4,183½	4,691½
	ASSISTED COMPANIES.																		
XXI.	Delhi-Umballa-Kalka	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
XXII.	Tárkessur	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	Bengal Central	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	LINES OWNED BY NATIVE STATES AND WORKED BY COMPANIES.																		
XXIII.	Khámgaon	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	8
XXIV.	Amráoti	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
XXV.	Bhopal-Itarsi (Native State Section)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
XXVI.	The Nizam's Guaranteed State	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
XXVII.	The Gaekwar's Petlād	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	Rájpura-Patiala	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	8
	LINES OWNED BY NATIVE STATES AND WORKED BY STATE RAILWAY AGENCY.																		
XXIX.	Rájpura-Bhátinda	Transferred from "Lines owned by Native States and worked by Companies."													—	—	—	—	—
XXX.	Jammu and Kashmir (Native State Section).	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	The Nizam's Guaranteed State	Transferred from "Lines owned by Native States and worked by Companies."													—	—	—	—	—
	Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	TOTAL STANDARD GAUGE*	20½	71	170	272½	288½	428½	626½	838½	1,587	2,333	2,479½	2,930½	3,317½	3,517½	3,885	3,963	4,211½	4,727½

(a) Kooshtea branch reduced from 4 miles to 3½ miles owing to part of it having become a siding since the construction of the Kooshtea loop line.

(b) Including the Betares branch taken over from the East Indian Railway on the opening of the Dufferin bridge on the 1st October 1887.

(c) Including the Pátri branch now treated as part of the Bombay, Baroda and Central India Railway.

* The figures in this line give the total of all railways up to 1862 inclusive.

TRAFFIC at the end of each YEAR from the Commencement—*continued.*

1871.	1872.	1873.	1874.	1875.	1876.	1877.	1878.	1879.	1880.	1881.	1882.	1883-84.	1884-85.	1885-86.	1886-87.	1887-88.	1888-89.	1889-90.	1890-91.	1891-92.	1892-93.	1893-94.			
Miles.	Miles.	Miles.	Miles.	Miles.	Miles.	Miles.	Miles.	Miles.	Miles.	Miles.	Miles.	Miles.	Miles.	Miles.	Miles.	Miles.	Miles.	Miles.	Miles.	Miles.	Miles.	Miles.			
1,503½	1,603½	1,503½	1,503½	1,503½	1,503½	1,503½	1,503½	1,503½	1,504½	Acquired by the State on 1st January 1880. See "State Lines worked by Companies."												—	—		
157	157	158½	158½	158½	158½	158½	158½	158½	158½	158½	160	160	(a) 159½	Acquired by the State on 1st July 1884, and transferred to "State Lines worked by the State."										—	
State on 1st April 1868, and transferred to "State lines worked by the State."												—	—	—	—	—	—	—	—	—	—	—	—		
42	293½	456½	540½	543½	543½	543½	546½	546½	546½	546½	546½	548½	595½	679½	686	(b) 692½	Purchased by the State on 1st January 1889. See "State lines worked by the State."						—		
663½	663½	663½	663½	663½	663½	663½	663½	663½	663½	663½	663½	663½	686½	686½	Acquired by the State on 1st January 1886 and absorbed into the North-Western (State) Railway system.										—
1,276	1,281	1,281	1,281	1,281	1,281	1,281	1,281	1,288	1,288	1,288	1,288	1,288	1,288	1,288	1,288½	1,288½	1,288½	1,288½	1,288½	1,288½	1,288½	1,286½	1,286½		
349½	389½	389½	406	407½	416½	421½	421½	421½	421½	421½	421½	438½	438½	438½	438½	438½	(c) 460½	460½	460½	460½	460½	460½	460½		
830	830	858	858	858	858	858	858	858	858	858	861½	860½	860½	860½	(d) 823½	838½	838	839½	839½	839½	839½	839½	839½		
166½	166½	166½	166½	87½	87½	87½	87½	Converted to metre gauge partly in 1875 and partly in 1879.														—	—		
4,988	5,284	5,476½	5,577½	5,503½	5,512½	5,517	5,520	5,440½	3,936½	3,937½	3,958	3,981½	3,869	3,266½	3,241½	3,257½	2,587	2,588½	2,588½	2,588½	2,586½	2,586½			
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	162	162½	161½	161½			
—	—	—	—	—	—	—	—	—	—	—	—	—	22	22½	22½	22½	22½	22½	22½	22½	22½	22½			
—	—	—	—	—	—	—	—	—	—	—	20	114	125½	125½	Transferred to "State lines worked by the State."						—	—			
—	—	—	—	—	—	—	—	—	—	—	20	114	147½	147½	22½	22½	22½	22½	184½	184½	183½	183½			
8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	7½	7½	7½	7½	7½	7½	7½	7½			
6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	5½	5½	5½	5½	5½	5½	5½	5½			
—	—	—	—	—	—	—	—	—	—	—	—	—	44	44	44	44	44	44	44	44	44	44			
—	—	—	121	121	121	121	121	—	—	—	—	—	121	121	(e) 204½	274	329½	329½	(f) 329½	329½	332½	332½			
Transferred to "Lines owned by Native States and worked by State Railway agency."												—	—	—	—	—	—	—	13½	13½	13½	13½	—		
—												—	—	—	—	—	—	—	—	—	—	—	—	—	
—												16	Transferred to "Lines owned by Native States and worked by State Railway agency."										—		
14	14	14	135	135	135	135	135	14	14	14	14	14	195	179	261½	331	386½	386½	402½	402½	402½	402½			
—	—	—	—	—	—	—	—	—	—	—	—	—	—	16	16	16	16	108	108	108	108	108			
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	16	16	16	16	16			
—	—	—	—	—	—	—	—	121	121	121	121	121	Transferred to "Lines owned by Native States and worked by Companies."										—		
—	—	—	—	—	—	—	—	121	121	121	121	121	—	16	16	16	16	124	124	124	124	124			
5,030	5,326	5,541½	5,781½	5,781½	5,746	5,753½	6,555½	6,566	6,798	6,937½	7,067½	7,313½	7,421½	7,564	7,990½	8,490½	9,117½	9,605	10,129½	10,111½	10,349½	10,596			

(d) The Bellary branch (Guntakal to Bellary) was purchased by and handed over to the Southern Mahratta Railway Company on the 1st February 1887.

(e) Excluding 3½ miles which were formerly counted twice over.

(f) Including Trimulgherry troop siding previously omitted.

† January 1883 to March 1884.

APPENDIX E.—LENGTH of RAILWAYS open for PUBLIC TRAFFIC at the

Serial No.	Railway.	1865.	1866.	1867.	1868.	1869.	1870.	1871.	1872.	1873.	1874.	1875.	1876.
<i>Metre Gauge.</i>													
	STATE LINES WORKED BY COMPANIES.	Miles.	Miles.	Miles.	Miles.	Miles.	Miles.	Miles.	Miles.	Miles.	Miles.	Miles.	Miles.
	Bengal-Nagpur - - - -	Transferred from "State lines worked by the State" (late Nagpur-Chhattisgarh State Railway).											—
XXXIII.	Bengal and North-Western— Tirhoot section - - - -	Transferred on the 1st July 1890 from "State lines worked by the State"											—
	Company's section - - - -	Transferred from "Assisted Companies."											—
XXXIV.	Rohilkhand and Kumaon (Lucknow- Bareilly Section. Bareilly-Pilibhit - - - -	Includes the Bareilly-Pilibhit and the Lucknow-Sitapur-Seramau Railways.											—
	Lucknow-Sitapur-Seramau - - - -												—
XXXV.	Rajputana-Malwa - - - -	Leased to the Bombay, Baroda and Central India Railway Company from the 1st January 1885.											—
XXXVI.	Palanpur-Deesa - - - -												—
XXXVII.	Southern Mahratta - - - -	Transferred from "Assisted Companies"											—
XXXVIII.	Guntakal-Mysore Frontier - - - -												—
XXXIX.	Southern Mahratta (Mysore Section) - - - -	Transferred from "Lines owned and worked by Native States"											—
XL	South Indian - - - -	Purchased from the late South Indian Guaranteed Railway Company on the 1st January 1891.											—
	Cuddapah-Nellore - - - -												—
	Villupuram-Guntakal - - - -												—
	Total - - - -												—
STATE LINES WORKED BY THE STATE.													
	Nagpur-Chhattisgarh - - - -	—	—	—	—	—	—	—	—	—	—	—	—
	Tirhoot - - - -	—	—	—	—	—	—	—	—	—	(a) 53	43	43
	Rajputana-Malwa - - - -	—	—	—	—	—	—	—	—	92½	320½	487½	508½
	Punjab Northern - - - -	—	—	—	—	—	—	—	—	—	—	62	108½
	North Western (State) - - - -	Transferred from the Punjab Northern State Railway.											—
	Cawnpore-Furukhabad - - - -	—	—	—	—	—	—	—	—	—	—	—	—
	Cawnpore-Achnera - - - -	—	—	—	—	—	—	—	—	—	—	—	—
	Hathras-Muttra-Achnera - - - -	—	—	—	—	—	—	—	—	—	—	29	29
	Northern Bengal - - - -	—	—	—	—	—	—	—	—	—	—	—	—
XLIII.	Eastern Bengal (State)—Northern and Bohar Sections (including the Kamta- Bharla 2½' gauge branch). Dacca - - - -	Transferred from the Northern Bengal State Railway.											—
XLIV.	Burma (State) - - - -	—	—	—	—	—	—	—	—	—	—	—	—
	Toungoo-Mandalay - - - -	—	—	—	—	—	—	—	—	—	—	—	—
XLV.	Mu Valley - - - -	—	—	—	—	—	—	—	—	—	—	—	—
	Total - - - -	—	—	—	—	—	—	—	—	92½	320½	571½	688½
LINE WORKED BY GUARANTEED COMPANY.													
	South Indian - - - -	17½	17½	17½	17½	17½	17½	17½	17½	17½	17½	192½	385½
	Total - - - -	17½	17½	17½	17½	17½	17½	17½	17½	17½	17½	192½	385

(a) Included with the Rohilkhand and Kumaon Railway (Lucknow-Bareilly section) from the 1st January 1891.

(b) Including the Cawnpore-Achnera Railway system from the 1st October 1886.

(c) Including the Bellary branch of the Madras Railway which was purchased by the Southern Mahratta Railway Company on the 1st February 1887, and converted from standard to metre gauge on the 16th May 1887.

(d) Including the Bellary Kistna State Railway (88½ miles) which was taken over by the Southern Mahratta Railway Company on the 1st January 1888.

(e) Temporary line opened for famine relief purposes only during this year; but public traffic was carried on it from 1st November 1875. Not included in total.

(f) Alteration of route *via* Rajitpur.

end of each Year from the Commencement—*continued.*

1877.	1878.	1879.	1880.	1881.	1882.	1883-84.	1884-85	1885-86.	1886-87.	1887-88.	1888-89.	1889-90.	1890-91.	1891-92.	1892-93.	1893-94.	
Miles.	Miles.	Miles.	Miles.	Miles.	Miles.	Miles.	Miles.	Miles.	Miles.	Miles.	Miles.	Miles.	Miles.	Miles.	Miles.	Miles.	
—	—	—	—	—	—	—	—	—	—	149	Converted to standard gauge on the 27th November 1888.						
—	—	—	—	—	—	—	—	—	—	—	—	—	329½	341½	341½	341½	
—	—	—	—	—	—	—	—	—	—	—	—	—	375½	414½	414½	420½	
—	—	—	—	—	—	—	—	—	—	—	—	—	140½	198½	221½	228½	
—	—	—	—	—	—	—	36	36	36	36	36	36	(a)	—	—	—	
—	—	—	—	—	—	—	—	—	55½	106	104½	104½	(a)	—	—	—	
—	—	—	—	—	—	—	1,414	1,414	(b) 1,667½	(n) 1,667½	1,665	1,672½	1,672½	1,674	1,674	1,674	
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	17½	
—	—	—	—	—	—	—	—	315½	(c) 597½	(d) 553	854½	977½	1,043½	1,043½	1,043½	1,043½	
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	63	119½	
—	—	—	—	—	—	—	—	—	139½	139½	219½	296½	295½	311½	331½	296	
—	—	—	—	—	—	—	—	—	—	—	—	—	900½	1,105½	1,042½	1,041½	
—	—	—	—	—	—	—	—	—	—	82½	See Villupuram-Guntakal						
—	—	—	—	—	—	—	—	—	—	82½	82½	Incorporated with the South-Indian Railway.					
—	—	—	—	—	—	—	1,450	1,765½	2,496½	3,034½	2,962½	3,169½	4,758½	5,089	5,132½	5,132½	
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
—	—	—	53	98	149	149	149	149	149	Taken over by the Bengal-Nagpur Railway Company on the 9th May 1887. See above.							—
75	82	82	82	82	82	(f) 193	227	225½	245½	259½	273½	273½	(g)	—	—	—	
508½	604½	723½	832½	1,117	1,116½	1,260½	Leased to the Bombay, Baroda, and Central India Railway Company from the 1st January 1885.										
(h) 103½	—	—	53½	53½	63½	71½	71½	Transferred to the North-Western (State) Railway on the 1st January 1886.									
—	—	—	—	—	—	—	—	(i) 27	(h) 10	10	10	Part converted to standard gauge and part abandoned.					
—	—	—	49½	86	86	86	249	253½	Leased to the Bombay, Baroda, and Central India Railway Company from the 1st October 1886, and amalgamated with the Rajputana-Malwa Railway system.								
29	29	29	29	53	52	52		286	285½	285½	Amalgamated with the Eastern Bengal (State) Railway on the 1st April 1887.						
134	219½	230½	230½	253½	267	271½		—	—	—	356	355½	429½	443½	442½	478½	478½
—	—	—	—	—	—	—	10½	85½	86	86	86	86	86	86	86	86	
161	161	161	(j) 167	167	167	260	260	333	333	333	333	333	336	558½	717½	730	
—	—	—	—	—	—	—	—	—	—	—	222½	222½	(m) 222½				
—	—	—	—	—	—	—	—	—	—	—	—	—	59				
1,010½	1,096	1,226½	1,497	1,910½	1,983	2,343½	1,253	1,359½	1,109½	1,044½	1,279½	1,844½	1,087½	1,146½	1,281½	1,294½	
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
510½	523½	631½	645½	653½	653½	654½	654½	654½	654½	654½	654½	654½	654½	(o)	(o)	(o)	
510½	523½	631½	645½	653½	653½	654½	654½	654½	654½	654½	654½	654½	654½	—	—	—	

(g) Made over to the Bengal and North-Western Railway for working on the 1st July 1890.

(h) Converted and transferred to the standard gauge in 1878.

(i) Including 10 miles of metre gauge line previously omitted.

(k) Hirok to Kotai.

(l) Suburban lines added. See Administration Report, Part II, of 1890-91.

(m) See Appendix D, Administration Report, Part II, of 1891-92.

(n) Decrease due to standard gauge line from Agra East Bank (junction with the East Indian Railway) to Agra Cantonment having been included in the total open mileage of the metre gauge system in previous years.

(o) Purchased by the State on the 1st January 1891. See "State lines worked by Companies."

† January 1883 to March 1884.

APPENDIX E.—LENGTH OF RAILWAYS open for PUBLIC TRAFFIC at the

Serial Number.	Railway.	1863.	1864.	1865.	1866.	1867.	1868.	1869.	1870.	1871.	1872.	1873.	1874.
	<i>Metro Gauge—concluded.</i>												
	ASSISTED COMPANIES.	Miles.	Miles.	Miles.	Miles.	Miles.	Miles.	Miles.	Miles.	Miles.	Miles.	Miles.	Miles.
	Bengal and North-Western	—	—	—	—	—	—	—	—	—	—	—	—
XLVI.	Deoghur	—	—	—	—	—	—	—	—	—	—	—	—
XLVII.	Rohilkund and Kumaon (Company's Section).	—	—	—	—	—	—	—	—	—	—	—	—
XLVIII.	Bengal-Doon	—	—	—	—	—	—	—	—	—	—	—	—
XLIX.	Dibru-Badiya	—	—	—	—	—	—	—	—	—	—	—	—
	Southern Mahratta	—	—	—	—	—	—	—	—	—	—	—	—
	Total	—	—	—	—	—	—	—	—	—	—	—	—
	LINES OWNED BY NATIVE STATES AND WORKED BY COMPANIES.												
LI.	The Gackwar's Mehsana	—	—	—	—	—	—	—	—	—	—	—	—
LII.	Kolhapur	—	—	—	—	—	—	—	—	—	—	—	—
LIV.	Yorvanpur-Mysore Frontier	—	—	—	—	—	—	—	—	—	—	—	—
LIII.	Mysore-Nanjungud	—	—	—	—	—	—	—	—	—	—	—	—
	Total	—	—	—	—	—	—	—	—	—	—	—	—
	LINES OWNED AND WORKED BY NATIVE STATES.												
LV.	Jodhpore-Bickaneer— Jodhpore Section	—	—	—	—	—	—	—	—	—	—	—	—
	Bickaneer Section	—	—	—	—	—	—	—	—	—	—	—	—
LVI.	Bhavnagar-Gondal-Junagarh-Porbandar— Mysore	—	—	—	—	—	—	—	—	—	—	—	—
LVII.	Jatalsur-Rajkot	—	—	—	—	—	—	—	—	—	—	—	—
	Total	—	—	—	—	—	—	—	—	—	—	—	—
	FOREIGN LINES.												
LX.	West of India Portuguese	—	—	—	—	—	—	—	—	—	—	—	—
LXI.	Pondicherry	—	—	—	—	—	—	—	—	—	—	—	—
	Total	—	—	—	—	—	—	—	—	—	—	—	—
	TOTAL METRE GAUGE	—	—	17½	17½	17½	17½	17½	17½	17½	17½	100½	346½
	<i>Special Gauges.</i>												
	STATE LINES WORKED BY THE STATE.												
	Nalhâti (4' 6")	Transferred from "Lines worked by Guaranteed Companies."									27½	27½	27½
	Cherra-Companyganj (2' 6")	—	—	—	—	—	—	—	—	—	—	—	—
LXII.	Jorhât (2' 6")	—	—	—	—	—	—	—	—	—	—	—	—
	Total	—	—	—	—	—	—	—	—	—	27½	27½	27½
	LINE WORKED BY GUARANTEED COMPANY.												
	Nalhâti (4' 6")	27½	27½	27½	27½	27½	27½	27½	27½	27½	Purchased by the		
	ASSISTED COMPANIES.												
LXIII.	Darjeeling-Himalayan (2' 6")	—	—	—	—	—	—	—	—	—	—	—	—
	Thatôn-Duyinzâik (2' 6")	—	—	—	—	—	—	—	—	—	—	—	—
	Total	—	—	—	—	—	—	—	—	—	—	—	—
	LINE OWNED BY NATIVE STATE AND WORKED BY COMPANY.												
LXIV.	The Gackwar's Dabhoi (2' 6")	—	—	—	—	—	—	—	—	—	—	20	20
	LINE OWNED BY NATIVE STATE AND WORKED BY STATE RAILWAY AGENCY.												
LXV.	Cooch Behar (2' 6")	—	—	—	—	—	—	—	—	—	—	—	—
	LINE OWNED AND WORKED BY NATIVE STATE.												
LXVI.	Morvi (2' 6")	—	—	—	—	—	—	—	—	—	—	—	—
	TOTAL SPECIAL GAUGES	27½	27½	27½	27½	27½	27½	27½	27½	27½	27½	47½	47½
	TOTAL OF ALL RAILWAYS*	2,600½	2,667½	3,302½	3,502½	3,620½	4,007½	4,250½	4,772½	5,074½	5,370½	5,698½	6,175½

(a) Including the Bhavnagar dock estates and the Junagarh quarry lines previously omitted.

(b) Incorporated with the East Indian Railway, with effect from the 1st April 1892.

* For previous totals, see page 218.

end of each Year from the Commencement—concluded.

1875.	1876.	1877.	1878.	1879.	1880.	1881.	1882.	1883-84.	1884-85.	1885-86.	1886-87.	1887-88.	1888-89.	1889-90.	1890-91.	1891-92.	1892-93.	1893-4.	
Miles.	Miles.	Miles.	Miles.	Miles.	Miles.	Miles.	Miles.	Miles.	Miles.	Miles.	Miles.	Miles.	Miles.	Miles.	Miles.	Miles.	Miles.	Miles.	
—	—	—	—	—	—	—	—	—	303	303	376½	376½	376½	375½	Transferred to "State lines worked by Companies."				
—	—	—	—	—	—	—	4	5½	5½	4	4½	4½	4½	4½	4½	4½	4½	4½	
—	—	—	—	—	—	—	—	—	54½	54½	54½	54½	54½	54½	54½	54	54	54	
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	27	32½	
—	—	—	—	—	—	—	15	38½	77½	77½	77½	77½	77½	77½	77½	77½	77½	77½	
—	—	—	—	—	—	—	—	40½	214	Transferred to "State lines worked by Companies."								—	—
—	—	—	—	—	—	—	19	84½	654½	439	513	513	513	512½	136½	136½	163½	168½	
—	—	—	—	—	—	—	—	—	—	—	21	20½	27½	27½	68	92½	92½	92½	
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	29	29	29	
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	51½	
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	15½	
—	—	—	—	—	—	—	—	—	—	—	21	20½	27½	27½	68	121½	121½	188½	
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
—	—	—	—	—	—	—	18½	18½	64	64	123½	123½	123½	123½	123½	274½	} 364	364	
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	43½			
—	—	—	—	—	105	192½	192½	198	198	198½	198½	198½	259½	(a) 333½	333½	333½	333½	333½	
—	—	—	—	—	—	58	86	87	140	140	Made over to the Southern Mahratta Railway Company on 1st July 1886.								
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	46½	
—	—	—	—	—	105	250½	297	298½	397	397½	317	317	383½	457	457½	624½	697½	744	
—	—	—	—	—	—	—	—	—	—	—	41	51	51	51	51	51	51	51	
—	—	—	—	7½	7½	7½	7½	7½	7½	7½	7½	7½	7½	7½	7½	7½	7½	7½	
—	—	—	—	7½	7½	7½	7½	7½	7½	7½	48½	58½	58½	58½	58½	58½	58½	58½	
764½	1,089	1,521½	1,619½	1,865½	2,255	2,821½	2,960	3,380	4,416½	4,623½	5,160½	5,642½	5,879	6,224½	6,563½	1,176½	7,455½	7,636½	
27½	27½	27½	27½	27½	27½	27½	27½	27½	27½	27½	27½	27½	27½	27½	27½	27½	(b)	—	
—	—	—	—	—	—	—	—	—	—	—	7½	7½	7½	7½	7½	8	(c)	—	
—	—	—	—	—	—	—	—	—	82½	29½	26½	30½	30½	28½	28½	28½	28½	28	
27½	27½	27½	27½	27½	27½	27½	27½	27½	59½	56½	61½	65½	65½	63½	63½	63½	28½	28	
State on the 31st March 1872, and transferred to "State lines worked by the State."											—	—	—	—	—	—	—	—	—
—	—	—	—	—	30	48½	50	50	51	51	51	51	51	51	51	51	51	51	
—	—	—	—	—	—	—	—	—	8	8	8	8	8	8	8	8	(c)	—	
—	—	—	—	—	30	48½	50	50	59	59	59	59	59	59	59	59	51	51	
20	20	20	20	40½	57½	60½	60½	58½	58½	58½	58½	58½	58½	58½	71½	71½	71½	71½	
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	22½	
—	—	—	—	—	—	—	—	—	—	—	24	68	68	68	93½	93½	93½	94	
47½	47½	47½	47½	67½	114½	136½	137½	136	177½	198½	247½	251½	251½	274½	287½	288½	244½	287	
6,543½	6,862½	7,322½	8,222½	8,499	9,167½	9,895½	10,155½	10,838½	12,015½	12,385½	13,398	14,384½	15,247½	16,104½	16,948½	17,576	18,048½	18,500	

(c) Now included with steam tramways.

(d) Difference as compared with total open mileage shown in Appendix C, is due to the inclusion in this appendix of the Trimulgherry troop siding on the Nizam's Guaranteed State Railway, and the Bhavnagar dock estates and Junágarh quarry lines on the Bhavnagar-Gondal-Junágarh-Forbandar Railway now treated as open mileage.

† January 1883 to March 1884.

APPENDIX F.—STATEMENT showing the TOTAL APPROXIMATE EARNINGS from the 1st January to the 31st March 1894 as compared with the actuals of the corresponding periods of 1892 and 1893.

Serial Number.	Railway.	1st January to 31st March 1892.	1st January to 31st March 1893.	1st January to 31st March 1894.
<i>Standard Gauge.</i>				
STATE LINES WORKED BY COMPANIES.		Rs.	Rs.	Rs.
I.	East Indian - - -	1,28,40,346	1,31,61,337	1,45,48,473
	Patna-Gya - - -	1,58,342		
II.	Bengal-Nágpur - - -	20,86,091	20,78,961	23,44,699
III.	Indian Midland - - -	13,21,380	12,86,802	14,09,808
V.	Godhra-Rutlam - - -	—	(a) 16,297	26,507
VIII.	Bezwada Extension - - -	26,816	(b) 56,829	23,785
	Total - - -	1,64,32,975	1,66,00,226	1,83,53,272
STATE LINES WORKED BY THE STATE.				
IX.	North-Western (State) (c) - -	79,22,699	74,22,434	82,03,485
X.	Hyderabad-Umarkot - - -	—	33,228	46,875
XI.	Oudh and Rohilkhand (State) - -	24,18,483	23,65,497	26,27,106
XII.	Eastern Bengal (State) (d) - -	23,51,463	26,01,910	31,79,627
XIII.	Bengal Central - - -	1,92,566	2,03,220	2,00,120
XIV.	Calcutta Port Commissioners' - -	Returns not received.	—	—
XV.	East Coast (State) - - -	—	—	2,62,961
	Total - - -	1,28,85,211	1,26,26,289	1,45,20,174
LINES WORKED BY GUARANTEED COMPANIES.				
XVIII.	Great Indian Peninsula (e) - -	1,24,48,831	1,15,65,769	1,22,51,323
XIX.	Bombay, Baroda, and Central India - -	38,15,689	40,62,772	42,51,998
XX.	Madras - - -	24,04,813	26,48,251	25,28,525
	Total - - -	1,86,69,333	1,82,76,792	1,90,31,846
ASSISTED COMPANIES.				
XXI.	Delhi-Umballa-Kalka - - -	2,75,164	2,80,959	3,21,501
XXII.	Tarkessur - - -	82,897	78,073	84,549
	Total - - -	3,58,061	3,59,032	4,06,050
LINES OWNED BY NATIVE STATES AND WORKED BY COMPANIES.				
XXV.	Bhopal-Itársi (Native States Section) (f) - - -	1,67,626	1,56,647	1,43,334
*XXVI.	The Nizam's Guaranteed State - -	7,36,430	7,51,645	7,29,989
XXVII.	The Gaekwar's Petlad - - -	14,325	17,998	16,522
	Total - - -	9,18,387	9,26,290	8,89,845
LINE OWNED BY NATIVE STATE AND WORKED BY STATE RAILWAY AGENCY.				
XXIX.	Rájpura-Bhátinda - - -	1,90,380	1,59,025	1,96,984
	Total standard gauge - -	4,94,54,347	4,80,47,654	5,33,98,171
<i>Metre Gauge.</i>				
STATE LINES WORKED BY COMPANIES.				
XXXIII.	Bengal and North-Western—	12,85,624	15,56,752	14,45,951
	Tirhoot Section - - -			
	Company's Section - - -			
XXXIV.	Rohilkund and Kumaon (Lucknow-Bareilly Section) - - -	1,96,760	2,09,588	2,59,756
XXXV.	Rajputana-Malwa - - -	63,39,431	64,34,928	68,27,912
XXXVI.	Pálanpur-Deesa - - -	—	—	10,140
XXXVII.	Southern Mahratta - - -	11,03,693	14,15,249	14,51,225
XXXVIII.	Guntakal-Mysore Frontier - -	—	26,324	94,456
XXXIX.	Southern Mahratta (Mysore Section) - -	3,16,897	4,29,686	3,42,227
XL.	South Indian - - -	18,14,472	20,11,363	17,41,969
	Total - - -	1,10,56,877	1,20,83,890	1,21,73,636

(a) Total earnings from the date of opening, viz., 16th January 1893.

(b) Including the Bezwada-Godávari Section of the East Coast (State) Railway from the date of opening, viz., 20th February 1893.

(c) Including the Amritsar-Patháñkot and the Jammu and Kashmir Railways.

(d) Including the metre and special gauge sections.

(e) Including the Wardha Coal, the Dhond-Mánmad, the Khámgaon, and the Amráoti Railways.

(f) Including the Bhopál-Itársi (British Section).

APPENDIX F.—STATEMENT showing the TOTAL APPROXIMATE EARNINGS from the 1st January to the 31st March 1894 as compared with the actuals of the corresponding periods of 1892 and 1893—concluded.

Serial Number.	Railway.	1st January to the 31st March 1892.	1st January to the 31st March 1893.	1st January to the 31st March 1894.
	<i>Metre Gauge—cont.</i>			
	STATE LINES WORKED BY THE STATE.	Rs.	Rs.	Rs.
XLIV.	Burma (State) - - -	23,62,358	24,85,662	22,16,991
	ASSISTED COMPANIES.			
XLVI.	Deoghur - - - -	Returns not received.		—
XLVII.	Rohilkund and Kumaon (Company's Section) - - - -	95,506	74,320	1,18,359
XLVIII.	Bengal-Dooars - - - -	—	(a) 9,871	28,700
XLIX.	Dibru-Sadiya - - - -	1,37,657	1,22,750	1,37,340
	Total - - - -	2,33,163	2,06,941	2,84,399
	LINES OWNED BY NATIVE STATES AND WORKED BY COMPANIES.			
LI.	The Gaekwar's Mehsána - -	67,152	94,092	1,19,579
LII.	Kolhápúr - - - -	21,408	31,794	30,519
LIII.	Yesvantpur-Mysore Frontier - -	—	6,478	40,866
LIV.	Mysore-Nanjangúd - - -	—	7,612	8,212
	Total - - - -	88,560	1,39,976	1,99,176
	LINES OWNED AND WORKED BY NATIVE STATES.			
LV.	Jodhpore-Bickaneer—			
	Jodhpore Section - - -	3,21,087	2,21,317	3,35,294
	Bickaneer Section - - -	21,947	17,929	20,359
LVI.	Bhávnapar-Gondal-Junágarh-Porbandar - - - -	3,78,879	5,75,502	5,54,578
LVII.	Jetalsar-Rájkot - - - -	—	—	38,591
	Total - - - -	7,21,913	8,14,748	9,49,002
	FOREIGN LINES.			
LX.	West of India Portuguese - -	} Returns not received.		—
LXI.	Pondicherry - - - -			
	Total metre gauge - - -	1,44,62,871	1,57,31,217	1,58,23,204
	<i>Special Gauges.</i>			
	STATE LINES WORKED BY THE STATE.			
	Nalháti (4' 0") - - - -	24,917	(b)	(b)
	Cherra-Companyganj (2' 6") - -	5,271	(c)	(c)
LXII.	Jorhát (2' 0") - - - -	12,853	13,274	14,278
	Total - - - -	43,041	13,274	14,278
	ASSISTED COMPANY.			
LXIII.	Darjeeling-Himalayan (2' 0") -	Returns not received.		—
	LINE OWNED BY NATIVE STATE AND WORKED BY COMPANY.			
LXIV.	The Gaekwar's Dabhoi (2' 6") -	57,744	72,606	72,723
	LINE OWNED BY NATIVE STATE AND WORKED BY STATE RAILWAY AGENCY.			
LXV.	Cooch Behar (2' 6") - - -	Returns not received.		—
	LINE OWNED AND WORKED BY NATIVE STATE.			
LXVI.	Morvi (2' 6") - - - -	71,750	79,882	85,419
	Total special gauges - - -	1,72,535	1,65,762	1,72,420
	Total of all Railways - - -	6,40,89,753	6,48,44,633	6,93,93,795

(a) Total earnings from the date of opening, viz., 15th January 1893.

(b) Incorporated with the East Indian Railway and converted to the standard gauge.

(c) Now treated as a steam tramway.

APPENDIX G.—STATEMENT showing the QUANTITIES of the principal COMMODITIES carried, and compared with the

Classification No.	Description of Commodity.	STANDARD							
		STATE LINES WORKED							
		I.—East Indian.				II.—Bengal-Nágpur.			
		Quantity.		Earnings.		Quantity.		Earnings.	
		Previous Year.	1893.	Previous Year.	1893.	Previous Year.	1893.	Previous Year.	1893.
		Tons.	Tons.	Rs.	Rs.	Tons.	Tons.	Rs.	Rs.
I.	Coal and coke carried for the public and foreign railways.	1,786,163	1,920,239	69,54,208	72,69,963	400,140	512,487	3,33,879	4,17,318
II.	Cotton, raw - - - -	27,563	28,704	4,91,767	5,15,362	3,713	2,587	80,417	37,012
III.	Cotton, manufactured - -	79,559	80,454	22,36,661	21,54,397	10,896	10,062	1,09,745	1,12,274
IV.	Drugs and chemicals - - -	4,728	4,677	1,21,064	1,04,996	320	374	5,331	6,921
V.	Dyes and tans - - - -	20,279	23,429	3,60,545	4,47,076	9,837	17,042	75,821	1,43,798
VI.	Grain and pulse - - - -	881,813	669,291	61,46,695	47,53,602	243,507	202,140	18,89,953	17,29,655
VII.	Hides and skins - - - -	25,014	25,217	4,47,098	4,11,529	2,865	2,662	23,306	24,964
VIII.	Horns - - - - -	982	631	13,632	11,742	—	—	—	—
IX.	Jute - - - - -	66,332	71,246	7,83,429	8,46,936	5,073	4,501	63,720	53,312
X.	Lac - - - - -	15,520	16,340	2,22,238	2,29,245	5,417	5,043	23,457	22,153
XI.	Leather, manufactured - -	2,159	2,258	63,018	71,144	—	45	—	472
XII.	Liquors - - - - -	6,435	6,229	1,53,086	1,39,922	585	800	4,353	4,744
XIII.	Metals - - - - -	96,531	85,706	13,69,942	12,46,579	7,002	5,251	79,366	55,887
XIV.	Oils - - - - -	52,657	59,660	6,75,630	7,34,441	3,443	3,145	1,35,633	1,25,492
XV.	Oil-seeds - - - - -	363,348	440,701	31,22,424	33,18,509	36,474	71,161	3,07,660	5,86,328
XVI.	Opium - - - - -	9,521	7,904	2,36,688	1,87,103	—	10	—	340
XVII.	Paper and paste-board - -	4,294	5,413	76,904	87,710	—	256	—	6,552
XVIII.	Provisions - - - - -	60,392	60,423	8,83,419	8,76,710	4,561	4,664	38,493	46,666
XIX.	Railway plant and rolling stock carried for public and foreign railways.	20,691	44,634	97,415	3,59,760	25,220	41,303	1,27,522	1,62,278
XX.	Salt - - - - -	230,099	236,295	12,32,978	11,71,649	36,148	38,651	2,19,536	2,43,611
XXI.	Saltpetre, &c. - - - -	46,168	36,130	4,96,476	3,63,150	—	—	—	—
XXII.	Silk, raw - - - - -	887	1,251	13,593	17,006	229	325	3,869	4,840
XXIII.	Silk piece-goods - - - -	256	218	8,567	7,562	—	—	—	—
XXIV.	Spices - - - - -	18,147	19,162	3,73,443	4,35,227	3,545	2,254	1,02,335	36,978
XXV.	Stone and lime - - - -	157,671	155,676	5,99,493	6,27,082	4,696	4,348	8,390	18,818
XXVI.	Sugar - - - - -	180,691	181,873	9,54,320	11,13,478	6,148	7,784	84,032	1,10,854
XXVII.	Tea - - - - -	961	1,463	27,376	35,688	—	170	—	1,135
XXVIII.	Timber - - - - -	45,392	34,904	2,11,958	1,69,681	17,597	24,529	1,00,077	1,07,871
XXIX.	Tobacco - - - - -	23,172	35,434	3,40,454	4,13,636	1,925	1,713	20,303	15,726
XXX.	Wool, raw - - - - -	1,000	846	24,354	17,820	—	—	—	—
XXXI.	Wool, manufactured - - -	1,765	1,477	52,505	51,482	—	—	—	—
XXXII.	All other articles of merchandise -	230,735	287,635	25,37,508	27,12,567	25,412	31,463	1,77,264	1,87,441
	Total - - - - -	4,470,870	4,516,450	3,13,45,983	3,09,12,756	859,053	1,000,275	40,19,452	42,62,949

N.B.—The entries under column "Previous year" in this appendix have been revised in accordance with the new classified list circulated with Public Works Department Circular, No. 111, Railway, dated 17th March 1893.

the EARNINGS therefrom on the STANDARD and METRE GAUGE RAILWAYS during the Year 1893, as previous Year.

GAUGE.													Classification No.
BY COMPANIES.								STATE LINES WORKED BY THE STATE.					
III.—Indian Midland. (a)				V.—Godhra-Rutlan.				IX.—North-Western (State) (b).					
Quantity.		Earnings.		Quantity.		Earnings.		Quantity.		Earnings.			
Previous Year.	1893.	Previous Year.	1893.	Previous Year.	1893.	Previous Year.	1893.	Previous Year.	1893.	Previous Year.	1893.		
Tons.	Tons.	Rs.	Rs.	Tons.	Tons.	Rs.	Rs.	Tons.	Tons.	Rs.	Rs.		
5,639	3,960	24,201	8,864	2	3	11,298	25,894	42,282	89,459	I.			
11,810	16,654	1,29,940	1,79,132	23	44	17,726	29,276	2,55,721	6,19,393	II.			
12,152	14,030	2,22,320	2,67,138	238	743	34,758	37,042	8,71,789	9,00,319	III.			
446	502	7,580	8,900	17	33	15,733	14,105	2,19,758	2,00,033	IV.			
2,487	2,726	26,616	27,829	58	126	10,314	10,505	1,81,019	1,78,816	V.			
147,819	104,629	8,18,554	5,28,270	11,254	9,533	653,721	777,865	49,33,408	56,57,510	VI.			
{ 6,447	{ 6,029 602 }	57,399 {	58,841	42	128	14,841	15,155	1,65,263	1,78,520	VII.			
			3,258	—	409	319	4,842	3,064	VIII.				
4,351	3,651	31,624	25,598	357	666	21,010	26,574	1,44,466	1,80,650	IX.			
—	97	—	863	1	3	290	306	4,077	3,827	X.			
378	534	7,275	8,847	—	1	1,528	1,757	31,632	36,401	XI.			
1,658	1,255	20,937	19,340	5	20	11,532	12,589	1,98,545	1,93,216	XII.			
4,863	6,756	51,029	72,379	377	677	41,995	38,096	7,23,096	6,58,311	XIII.			
2,597	3,476	25,060	33,041	162	337	17,831	18,221	3,09,433	2,91,343	XIV.			
53,001	74,428	3,62,463	5,41,089	1,208	1,082	66,728	193,111	4,77,263	21,63,127	XV.			
192	183	1,408	1,240	—	—	61	90	511	451	XVI.			
1,195	1,724	14,276	16,755	1	2	1,315	1,969	21,448	31,447	XVII.			
10,372	10,699	1,14,430	1,09,676	587	950	67,778	74,490	8,24,994	8,49,845	XVIII.			
879	804	10,853	9,841	—	—	13,668	32,321	1,33,943	1,74,953	XIX.			
25,139	23,788	1,59,842	1,52,530	1,390	1,971	91,710	91,720	5,76,512	5,68,997	XX.			
—	60	—	744	12	15	1,900	3,633	25,550	39,113	XXI.			
—	1	—	22	—	—	289	292	4,091	4,710	XXII.			
—	3	—	146	2	4	41	47	1,241	1,189	XXIII.			
2,714	3,181	34,426	38,486	45	109	7,235	6,973	95,300	96,975	XXIV.			
26,608	18,874	45,708	37,852	150	230	215,173	101,158	3,92,467	1,66,678	XXV.			
32,233	26,065	3,39,551	2,33,058	458	692	145,849	141,808	15,16,820	13,23,071	XXVI.			
74	140	1,859	3,405	—	2	2,903	3,269	59,053	70,945	XXVII.			
7,307	11,796	18,573	28,181	135	210	92,631	39,322	2,79,368	1,54,198	XXVIII.			
2,428	3,053	32,355	39,239	231	500	10,242	14,334	1,11,552	1,55,905	XXIX.			
—	37	—	637	—	—	13,017	13,446	4,51,633	4,84,401	XXX.			
—	140	—	3,147	1	2	2,056	2,112	39,373	38,792	XXXI.			
9,326	10,364	1,24,099	1,33,019	11,602	9,168	108,374	179,277	15,81,875	16,64,369	XXXII.			
372,115	350,241	26,82,373	25,91,417	23,413	27,251	1,693,956	1,907,076	1,46,83,330	1,71,80,528	Total.			

(a) Including the Bhopal-Itarsi Railway.

(b) Including the Jammu and Kashmir Railway (Native State section).

APPENDIX G.—STATEMENT showing the QUANTITIES of the principal COMMODITIES carried, and
compared with the

Classification No.	Description of Commodity.	STANDARD							
		STATE LINES WORKED							
		X.—Hyderabad-Umarkot.				XI.—Oudh and Rohilkhand (State).			
		Quantity.		Earnings.		Quantity.		Earnings.	
		Previous Year.	1898.	Previous Year.	1898.	Previous Year.	1898.	Previous Year.	1898.
		Tons.	Tons.	Rs.	Rs.	Tons.	Tons.	Rs.	Rs.
I	Coal and coke carried for the public and foreign railways.	—	—	—	—	18,048	23,969	67,948	85,594
II.	Cotton, raw	357	2,352	1,339	7,170	5,915	4,913	55,550	47,973
III.	Cotton, manufactured	350	805	918	2,269	19,441	21,288	1,60,445	1,67,112
IV.	Drugs and chemicals	60	297	186	1,328	1,429	1,130	12,696	11,574
V.	Dyes and tans	60	94	166	238	5,565	4,955	46,625	46,543
VI.	Grain and pulse	1,668	12,330	2,434	23,107	260,686	222,042	11,61,240	9,46,239
VII.	Hides and skins	101	319	262	517	7,322	7,085	58,378	46,789
VIII.	Horns	1	—	1	—	658	408	5,157	2,860
IX.	Jute	204	535	436	1,076	10,286	8,912	56,452	48,494
X.	Lao	6	8	12	22	357	337	1,824	1,836
XI.	Leather, manufactured	6	26	22	87	544	546	5,866	6,328
XII.	Liquors	25	74	51	163	3,563	4,576	41,170	43,335
XIII.	Metals	107	740	307	1,076	23,541	24,514	1,35,701	1,50,517
XIV.	Oils	32	90	69	246	10,350	12,222	71,263	78,858
XV.	Oil-seeds	1,260	3,850	1,393	5,404	71,596	75,754	2,95,272	2,96,501
XVI.	Opium	—	—	—	—	458	907	13,715	26,469
XVII.	Paper and paste-board	5	3	13	6	1,747	2,002	10,005	10,397
XVIII.	Provisions	820	1,292	2,338	4,463	6,895	8,247	50,343	56,376
XIX.	Railway plant and rolling stock carried for the public and foreign railways.	4	—	—	—	1	965	42	988
XX.	Salt	94	239	87	202	81,243	80,971	3,36,311	3,33,845
XXI.	Saltpetre, &c.	2	66	2	128	1,024	988	7,095	4,744
XXII.	Silk, raw	10	26	20	79	3	1	49	4
XXIII.	Silk piece-goods	3	3	5	11	23	15	72	85
XXIV.	Spices	23	53	53	83	4,227	4,306	46,380	46,494
XXV.	Stone and lime	43	603	90	818	17,408	21,726	35,830	44,627
XXVI.	Sugar	297	914	534	1,824	2,12,032	1,70,765	9,12,333	7,97,347
XXVII.	Tea	—	2	—	2	451	611	5,460	8,483
XXVIII.	Timber	40	97	39	183	17,043	16,689	63,518	59,848
XXIX.	Tobacco	11	46	23	102	6,395	8,848	31,602	51,251
XXX.	Wool, raw	52	273	133	702	137	217	1,382	2,042
XXXI.	Wool, manufactured	2	0	1	13	234	212	2,806	2,860
XXXII.	All other articles of merchandise	949	1,614	1,612	2,049	101,562	107,476	4,42,222	4,31,709
	Total	6,572	28,756	12,636	54,541	801,664	837,572	41,34,702	38,53,663

the EARNINGS therefrom, on the STANDARD and METRE GAUGE RAILWAYS during the Year 1893, as previous Year—*continued*.

GAUGE—*continued*.

BY THE STATE—*continued*.

XII.—Eastern Bengal (State).				XIII.—Bengal Central.				XIV.—Calcutta Port Commissioners'.				Classification.	
Quantity.		Earnings.		Quantity.		Earnings.		Quantity.		Earnings.			
Previous Year.	1893.	Previous Year.	1893.	Previous Year.	1893.	Previous Year.	1893.	Previous Year.	1893.	Previous Year.	1893.		
Tons.	Tons.	Rs.	Rs.	Tons.	Tons.	Rs.	Rs.	Tons.	Tons.	Rs.	Rs.		
153,781	324,659	1,18,216	1,23,413	17,618	20,390	16,859	21,184	—	—	—	—	I.	
4,545	3,166	14,864	15,373	46	10	124	37	—	—	—	—	II.	
40,958	43,482	3,83,398	3,97,177	4,347	5,127	11,936	12,433	—	—	—	—	III.	
—	151	—	2,666	—	8	—	36	—	—	—	—	IV.	
—	1,140	—	6,443	—	167	—	290	—	—	—	—	V.	
152,313	185,873	5,18,914	6,39,662	9,717	14,852	16,521	25,169	—	—	—	—	VI.	
11,467	15,843	55,331	75,905	417	567	1,019	1,371	—	—	—	—	VII.	
—	51	—	276	—	1	—	7	—	—	—	—	VIII.	
345,606	350,462	29,37,654	30,08,334	17,035	12,100	54,286	39,508	—	—	—	—	IX.	
—	40	—	184	—	—	—	—	—	—	—	—	X.	
—	235	—	2,463	—	12	—	62	—	Information not available.	—	—	XI.	
—	464	—	6,042	—	12	—	49	—		—	—	XII.	
21,942	17,749	1,90,189	1,58,818	1,470	1,290	3,051	3,130	—		—	—	XIII.	
52,104	93,634	1,34,813	1,88,235	3,293	4,203	5,486	7,312	—		—	—	XIV.	
31,882	44,693	1,03,399	1,38,908	3,418	4,406	5,049	6,086	—		—	—	XV.	
—	8	—	157	—	—	—	—	—		—	—	—	XVI.
—	309	—	2,991	—	18	—	85	—		—	—	—	XVII.
12,295	16,316	84,909	1,10,359	13,492	2,943	34,130	6,819	—		—	—	—	XVIII.
—	620	—	4,448	—	—	—	—	—		—	—	—	XIX.
53,848	52,184	2,49,810	2,42,524	3,722	3,454	5,134	4,730	—		—	—	—	XX.
—	17	—	136	—	—	—	—	—	—	—	—	XXI.	
—	109	—	1,317	—	—	—	—	—	—	—	—	XXII.	
—	10	—	41	—	—	—	—	—	—	—	—	XXIII.	
12,533	16,079	19,826	60,445	—	11,188	—	28,171	—	—	—	—	XXIV.	
—	2,379	—	6,906	—	303	—	132	—	—	—	—	XXV.	
22,383	26,597	74,790	82,964	8,628	11,254	20,667	27,207	—	—	—	—	XXVI.	
27,881	28,919	5,89,434	6,16,711	—	—	—	—	—	—	—	—	XXVII.	
6,470	4,118	33,998	14,907	18	308	80	1,085	—	—	—	—	XXVIII.	
22,864	24,871	2,43,561	2,25,488	1,367	1,735	2,501	3,240	—	—	—	—	XXIX.	
—	123	—	1,950	—	—	—	—	—	—	—	—	XXX.	
—	23	—	238	—	—	—	—	—	—	—	—	XXXI.	
112,602	109,834	5,38,318	5,52,793	14,721	12,352	27,744	22,781	—	—	—	—	XXXII.	
1,085,474	1,364,158	62,91,324	66,82,074	99,809	106,700	2,04,587	2,10,909	—	—	—	—	Total.	

APPENDIX G.—STATEMENT showing the QUANTITIES of the principal COMMODITIES carried, and compared with the

Classification No.	Description of Commodity.	STANDARD							
		STATE LINES WORKED BY THE STATE—concluded.				LINES WORKED BY			
		XV.—East Coast (State).				XXVIII.—Great Indian Peninsula. (a)			
		Quantity.		Earnings.		Quantity.		Earnings.	
		Previous Year.	1893.	Previous Year.	1893.	Previous Year.	1893.	Previous Year.	1893.
		Tons.	Tons.	Rs.	Rs.	Tons.	Tons.	Rs.	Rs.
I.	Coal and coke carried for the public and foreign railways.		2		6	83,707	89,845	2,33,646	2,51,446
II.	Cotton, raw		7		84	197,873	151,726	54,36,077	39,11,315
III.	Cotton, manufactured		164		1,397	48,778	50,178	13,97,609	14,17,971
IV.	Drugs and chemicals		63		304	9,730	19,223	1,31,034	2,64,485
V.	Dyes and tans		187		867	35,353	30,622	5,06,383	4,97,260
VI.	Grain and pulse		2,700		7,350	701,316	599,889	86,04,992	66,75,029
VII.	Hides and skins		37		122	11,923	12,216	2,75,362	2,80,559
VIII.	Horns		33		243	10,503	5,154	76,753	48,638
IX.	Jute		83		608	22,156	21,605	3,11,861	2,93,453
X.	Lac		7		72	197	271	3,168	3,841
XI.	Leather, manufactured		2		18	1,859	1,785	30,677	33,297
XII.	Liquors		26		144	8,585	9,109	1,41,561	1,53,059
XIII.	Metals		355		2,047	42,917	48,800	7,10,603	7,88,344
XIV.	Oils		461		2,306	36,794	47,886	5,25,882	8,00,627
XV.	Oil-seeds		1,760		3,588	344,738	461,660	42,89,519	55,80,743
XVI.	Opium		0		80	2,660	2,322	1,44,406	1,25,281
XVII.	Paper and paste-board		8		70	3,687	4,165	98,498	1,06,403
XVIII.	Provisions		591		3,136	99,650	72,956	15,71,291	11,71,114
XIX.	Railway plant and rolling stock carried for the public and foreign railways.		—		—	18,813	13,574	3,21,987	2,32,536
XX.	Salt		13		26	134,189	151,529	16,72,412	16,58,340
XXI.	Saltpetre, &c.		2		11	—	842	—	14,402
XXII.	Silk, raw		—		—	13	38	524	1,192
XXIII.	Silk piece-goods		2		23	307	323	7,603	9,024
XXIV.	Spices		337		1,791	24,174	23,333	3,97,194	3,90,634
XXV.	Stone and lime		75		129	16,730	14,486	7,08,027	1,06,447
XXVI.	Sugar		75		394	61,119	59,475	94,780	8,02,835
XXVII.	Tea		—		—	174	303	4,980	9,357
XXVIII.	Timber		34		124	101,036	110,161	5,19,820	5,20,631
XXIX.	Tobacco		36		227	9,290	6,709	1,16,786	97,983
XXX.	Wool, raw		—		—	301	441	8,747	12,202
XXXI.	Wool, manufactured		14		154	1,286	1,291	24,876	26,520
XXXII.	All other articles of merchandise		2,370		12,333	66,795	88,323	10,80,250	12,12,859
	Total		9,552		37,749	2,157,369	2,089,100	2,95,32,728	2,74,97,786

(a) Including the Wardha Coal, the Dhond-Manmad, the Khairgaon, and the Amravati Railways.

the EARNINGS therefrom, on the STANDARD and METRE GAUGE RAILWAYS during the Year 1893, as previous Year—*continued*.

GAUGE—continued.													Classifica- tion No.
GUARANTEED COMPANIES.								ASSISTED COMPANIES.					
XIX.—Bombay, Baroda, and Central India.				XX.—Madras.				XXI.—Delhi-Umballa-Kalka.					
Quantity.		Earnings.		Quantity.		Earnings.		Quantity.		Earnings.			
Previous Year.	1893.	Previous Year.	1893.	Previous Year.	1893.	Previous Year.	1893.	Previous Year.	1893.	Previous Year.	1893.		
Tons.	Tons.	Rs.	Rs.	Tons.	Tons.	Rs.	Rs.	Tons.	Tons.	Rs.	Rs.		
46,810	42,025	2,58,870	2,32,475	51,506	71,399	2,43,909	2,95,598	1,964	3,279	5,042	8,849	I.	
112,805	114,500	13,02,714	12,04,378	14,028	26,645	2,03,426	3,49,579	431	1,423	2,714	9,445	II.	
25,823	26,677	5,22,069	5,45,709	16,420	16,733	2,27,903	2,26,856	2,959	3,154	28,887	27,255	III.	
2,953	3,345	42,416	48,765	2,089	2,584	25,518	27,592	334	366	3,470	3,385	IV.	
6,223	8,302	96,979	1,34,410	25,047	21,605	2,31,507	1,98,945	359	719	3,160	6,045	V.	
244,403	196,958	15,07,219	11,27,224	229,618	264,340	13,20,407	16,31,950	14,180	17,850	45,213	61,249	VI.	
3,356	3,516	45,849	47,973	23,620	22,397	3,23,697	3,27,500	565	424	3,614	2,891	VII.	
—	73	—	1,208	231	115	2,417	1,260	36	51	324	699	VIII.	
7,956	7,443	75,285	70,418	5,821	7,725	51,055	71,787	3,275	4,535	17,198	20,488	IX.	
—	29	—	241	131	165	1,289	1,544	16	34	140	188	X.	
673	733	10,577	12,267	2,164	259	36,238	5,098	421	421	4,981	4,529	XI.	
3,299	4,109	38,814	47,436	8,835	8,011	81,124	80,297	3,139	4,040	14,617	16,422	XII.	
29,354	29,671	3,83,344	3,76,155	13,693	16,736	1,55,823	1,81,832	3,650	3,799	24,001	21,777	XIII.	
7,176	9,842	75,482	1,07,284	13,446	15,940	1,09,447	1,25,666	1,079	1,317	6,774	8,117	XIV.	
111,117	217,116	9,39,668	17,17,357	33,936	51,675	1,94,775	2,67,621	2,000	11,247	6,995	37,912	XV.	
431	316	15,503	10,560	—	—	—	—	17	26	222	349	XVI.	
—	839	—	12,186	312	388	5,312	6,069	365	394	3,080	3,545	XVII.	
30,502	44,150	3,72,187	3,90,823	71,135	70,483	5,70,946	5,64,991	3,518	4,171	19,565	21,837	XVIII.	
29,266	23,220	1,87,919	1,41,048	2,214	2,334	15,011	13,699	16	20	59	60	XIX.	
185,251	144,233	4,20,584	4,42,073	61,005	55,649	3,37,216	2,93,224	1,670	2,094	4,327	5,079	XX.	
1,101	1,313	9,813	11,690	141	106	1,191	1,085	462	543	1,567	1,942	XXI.	
453	532	13,049	15,529	102	86	1,946	1,908	101	29	1,166	345	XXII.	
				114	100	2,091	1,951	4	1	59	23	XXIII.	
8,401	9,406	1,13,120	1,19,964	7,424	10,494	75,776	1,21,610	819	774	5,932	4,964	XXIV.	
28,873	29,885	80,678	86,732	18,799	24,632	61,202	56,239	8,733	8,988	16,659	15,673	XXV.	
39,948	42,504	4,06,077	4,06,958	29,620	30,719	2,12,683	2,13,823	8,704	9,208	27,496	25,869	XXVI.	
832	1,227	13,055	16,494	355	452	8,927	10,865	45	33	369	222	XXVII.	
29,646	33,378	2,01,605	2,36,890	34,790	55,542	2,09,112	2,58,900	439	1,192	1,279	4,089	XXVIII.	
17,697	15,271	1,36,836	1,12,508	13,264	12,840	1,19,957	1,18,414	1,641	1,880	12,802	13,669	XXIX.	
5,240	5,649	1,15,761	1,28,196	225	301	1,880	2,445	31	89	787	758	XXX.	
				451	623	5,715	7,547	268	111	2,826	1,074	XXXI.	
255,054	256,610	12,38,083	14,21,218	113,800	99,440	6,31,385	6,52,418	14,213	17,838	127,573	1,06,732	XXXII.	
1,183,653	1,270,438	86,23,556	92,86,122	799,406	882,108	54,68,885	61,18,911	75,497	1,00,050	3,92,813	4,35,391	Total.	

APPENDIX G.—STATEMENT showing the QUANTITIES of the principal COMMODITIES carried, and compared with the

Classification No.	Description of Commodity.	STANDARD							
		ASSISTED COMPANIES.				LINES OWNED BY NATIVE STATES			
		XXII.—Tarkessur.				XXVI.—The Nizam's Guaranteed State (a).			
		Quantity.		Earnings.		Quantity.		Earnings.	
		Previous Year.	1893.	Previous Year.	1893.	Previous Year.	1893.	Previous Year.	1893.
		Tons.	Tons.	Rs.	Rs.	Tons.	Tons.	Rs.	Rs.
I.	Coal and coke carried for the public and foreign railways.	1,849	2,135	849	971	105,107	118,820	5,64,544	5,76,178
II.	Cotton, raw	—	1	—	3	773	1,970	8,196	23,691
III.	Cotton, manufactured	99	109	179	213	4,319	4,553	63,533	69,400
IV.	Drugs and chemicals	40	3	77	10	489	747	5,319	7,126
V.	Dyes and tans	12	23	17	36	2,196	2,165	18,147	17,736
VI.	Grain and pulse	5,047	1,766	6,133	2,133	39,321	43,121	1,97,667	2,16,735
VII.	Hides and skins	11	20	14	27	2,456	2,150	21,407	17,638
VIII.	Horns	2	3	4	11	943	440	4,551	2,025
IX.	Jute	1,661	1,309	2,988	1,739	1,633	1,794	12,208	14,075
X.	Lac	1	1	1	1	22	26	252	271
XI.	Leather, manufactured	—	—	—	1	80	155	940	1,755
XII.	Liquors	—	—	—	1	2,447	2,768	17,049	18,944
XIII.	Metals	137	158	206	193	8,670	4,609	92,448	45,015
XIV.	Oils	455	564	551	668	2,680	3,442	25,003	28,810
XV.	Oil-seeds	1,553	1,396	1,495	1,403	45,872	48,588	2,30,777	2,48,522
XVI.	Opium	—	—	—	—	21	27	874	1,216
XVII.	Paper and paste-board	15	14	23	23	405	455	4,841	5,363
XVIII.	Provisions	3,040	2,250	3,445	2,665	8,184	9,605	81,756	92,994
XIX.	Railway plant and rolling stock carried for the public and foreign railways.	—	2,011	—	987	175	132	2,635	2,118
XX.	Salt	986	856	972	40	28,999	26,352	1,44,946	1,30,878
XXI.	Saltpetre, &c.	83	140	88	138	53	66	347	463
XXII.	Silk, raw	—	3	—	3	—	2	10	24
XXIII.	Silk piece-goods	—	—	—	—	10	6	180	112
XXIV.	Spices	36	63	61	106	8,475	4,479	96,892	36,730
XV.	Stone and lime	378	1,232	193	434	8,071	6,019	30,269	26,874
XXVI.	Sugar	214	219	240	235	3,370	3,219	25,656	22,999
XXVII.	Tea	—	—	—	—	25	69	502	1,006
XXVIII.	Timber	78	118	56	123	16,301	21,156	65,995	85,179
XXIX.	Tobacco	53	56	101	103	1,157	1,969	16,841	29,204
XXX.	Wool, raw	—	1	—	2	279	77	3,494	1,060
XXXI.	Wool, manufactured	—	—	—	1				
XXXII.	All other articles of merchandise	4,554	3,953	5,681	4,935	9,585	9,834	76,125	76,733
	Total	20,304	18,409	23,375	17,975	297,018	318,981	17,43,304	18,02,671

(a) Including the Bezwada extension, and the Bezwada-Godavari section of the East Coast (State) Railway

the EARNINGS therefrom, on the STANDARD and METRE GAUGE RAILWAYS during the Year 1893, as previous Year—continued.

GAUGE—concluded.								METRE GAUGE.				Classification No.
AND WORKED BY COMPANIES.				LINE OWNED BY NATIVE STATE AND WORKED BY STATE RAILWAY AGENCY.				STATE LINES WORKED BY COMPANIES.				
XXVII.—The Gaekwar's Petlad.				XXIX.—Rajpura-Bhatinda.				XXXIII.—Bengal and North-Western. (b)				
Quantity.		Earnings.		Quantity.		Earnings.		Quantity.		Earnings.		
Previous Year.	1893.	Previous Year.	1893.	Previous Year.	1893.	Previous Year.	1893.	Previous Year.	1893.	Previous Year.	1893.	
Tons.	Tons.	Rs.	Rs.	Tons.	Tons.	Rs.	Rs.	Tons.	Tons.	Rs.	Rs.	
5	—	4	—	900	1,292	788	1,238	21,431	25,408	36,975	35,672	I.
831	513	1,015	721	205	234	621	787	737	772	8,649	9,653	II.
712	677	916	874	559	721	2,339	3,635	16,634	18,887	1,42,303	1,48,860	III.
65	143	62	115	339	340	1,427	1,444	1,333	1,592	8,504	14,040	IV.
107	103	129	121	316	474	1,218	2,154	4,756	4,440	32,104	35,677	V.
1,233	2,404	781	1,541	41,691	63,985	1,03,186	1,86,602	236,816	237,102	9,53,622	9,09,706	VI.
47	72	54	78	149	194	408	457	4,374	5,537	26,605	27,898	VII.
—	1	—	1	2	—	10	1	111	58	714	550	VIII.
114	118	116	117	1,456	2,820	5,823	11,775	8,798	8,803	51,142	47,089	IX.
—	—	—	—	11	8	40	32	717	686	2,782	2,631	X.
15	5	19	6	43	56	169	356	290	279	1,782	1,898	XI.
42	40	65	63	298	540	1,152	2,273	302	337	2,453	2,438	XII.
273	264	245	277	1,397	1,300	3,493	4,123	6,730	8,812	37,555	51,507	XIII.
134	137	141	164	302	351	525	778	6,864	8,546	26,075	32,877	XIV.
372	1,147	226	725	3,653	11,072	7,957	18,617	118,632	117,160	4,68,254	4,54,023	XV.
1	1	1	8	17	35	165	591	767	627	8,132	10,652	XVI.
—	13	—	15	38	52	105	237	188	91	1,573	556	XVII.
450	428	471	433	3,400	2,011	7,845	9,004	10,664	9,409	58,425	47,957	XVIII.
—	—	—	—	—	—	—	—	—	—	—	—	XIX.
798	777	683	62	1,451	1,461	1,086	1,625	69,870	67,203	1,56,104	1,81,841	XX.
3	4	3	4	103	175	99	416	13,252	10,826	26,379	22,805	XXI.
} 4	1	7	4	{ 6	7	15	16	} 14	2	55	8	{ XXII. XXIII.
241	261	215	227	493	477	764	669	3,062	5,167	19,953	31,254	XXIV.
2,836	1,230	1,554	1,010	9,538	6,918	10,585	6,320	4,121	6,282	8,661	14,704	XXV.
826	694	784	547	14,099	13,991	44,903	44,453	25,501	29,142	1,15,245	1,33,048	XXVI.
—	—	—	—	6	6	34	24	17	44	197	393	XXVII.
1,665	1,830	1,405	1,448	4,513	3,011	8,371	6,652	21,591	8,795	19,978	13,777	XXVIII.
7 659	6,227	6,898	5,090	213	454	469	1,334	19,138	20,306	1,02,634	1,10,967	XXIX.
1	11	17	18	25	39	92	209	} 236	{ 134	2,741	1,278	XXX.
—	—	—	—	112	125	362	408					122
177	3,893	1,979	2,168	4,223	7,758	26,473	3,056	10,814	40,793	1,11,710	1,23,991	XXXII.
1,621	21,179	17,990	17,038	90,158	120,387	2,31,115	3,36,236	617,060	637,432	24,32,605	24,83,882	Total.

(b) Includes the Tirhoot Section.

APPENDIX G.—STATEMENT showing the QUANTITIES of the principal COMMODITIES carried, and compared with the

Classification No.	Description of Commodity.	METRE							
		STATE LINES WORKED							
		XXXV.—Rajputana-Malwa.				XXXVI.—Palanpur-Deesa.			
		Quantity.		Earnings.		Quantity.		Earnings.	
		Previous Year.	1892.	Previous Year.	1892.	Previous Year.	1893.	Previous Year.	1893.
		Tons.	Tons.	Rs.	Rs.	Tons.	Tons.	Rs.	Rs.
I.	Coal and coke carried for the public and foreign railways.	8,542	7,607	62,884	45,544	—	—	—	—
II.	Cotton, raw	50,555	47,400	7,07,456	7,31,126	—	—	—	—
III.	Cotton, manufactured	30,807	35,863	7,93,720	9,19,027	23	—	—	38
IV.	Drugs and chemicals	2,095	2,199	38,326	42,396	2	—	—	3
V.	Dyes and tans	9,321	11,213	1,28,723	1,67,416	7	—	—	10
VI.	Grain and pulse	577,540	508,857	50,24,464	38,79,227	280	—	—	238
VII.	Hides and skins	5,782	5,728	67,965	65,162	15	—	—	17
VIII.	Horns	—	56	—	684	—	—	—	—
IX.	Jute	14,776	19,903	1,31,567	1,66,128	5	—	—	10
X.	Lac	—	358	—	4,013	—	—	—	—
XI.	Leather, manufactured	745	1,052	9,752	18,808	1	—	—	2
XII.	Liquors	3,113	3,679	38,164	44,463	64	—	—	63
XIII.	Metals	25,430	26,900	3,37,932	3,55,602	17	—	—	25
XIV.	Oils	6,551	8,556	71,371	1,00,087	16	—	—	16
XV.	Oil-seeds	140,959	202,196	9,92,650	23,56,605	30	—	—	20
XVI.	Opium	4,074	4,139	72,841	67,975	—	—	—	—
XVII.	Paper and paste-board	—	715	—	12,608	—	—	—	2
XVIII.	Provisions	44,794	43,995	4,65,669	4,68,311	101	—	—	101
XIX.	Railway plant and rolling-stock carried for the public and foreign railways.	10,476	22,250	70,195	25,350	—	—	—	—
XX.	Salt	216,757	209,728	21,05,316	21,26,463	26	—	—	33
XXI.	Saltpetre, &c.	11,864	10,020	72,953	66,990	1	—	—	3
XXII.	Silk, raw	223	297	14,485	18,606	—	—	—	—
XXIII.	Silk piece-goods	—	—	—	—	—	—	—	—
XXIV.	Spices	9,158	12,843	1,01,062	1,55,866	12	—	—	18
XXV.	Stone and lime	20,619	21,589	77,148	81,219	67	—	—	64
XXVI.	Sugar	142,304	135,981	17,22,512	15,26,401	243	—	—	233
XXVII.	Tea	755	972	28,094	32,784	2	—	—	3
XXVIII.	Timber	15,054	18,213	74,008	79,393	3	—	—	4
XXIX.	Tobacco	13,117	13,196	2,07,055	2,00,132	5	—	—	9
XXX.	Wool, raw	5,662	5,682	1,26,092	1,07,524	1	—	—	2
XXXI.	Wool, manufactured	—	856	—	27,088	1	—	—	7
XXXII.	All other articles of merchandise.	118,603	108,084	1,283,745	9,82,042	102	—	—	1,048
	Total	1,439,586	1,581,067	1,48,22,159	1,43,75,123	1,029	—	—	1,969

Opened for traffic on the 8th November 1893.

Opened for traffic on the 8th November 1893.

the EARNINGS therefrom, on the STANDARD and METRE GAUGE RAILWAYS during the Year 1893, as previous Year—*continued*.

GAUGE—*continued*.

BY COMPANIES—concluded.								STATE LINE WORKED BY THE STATE.				Classification No.	
XXXVII.—Southern Mahratta. (a)				XXXIX. South Indian (b).				XLIV.—Burma (State).					
Quantity.		Earnings.		Quantity.		Earnings.		Quantity.		Earnings.			
Previous Year.	1893.	Previous Year.	1893.	Previous Year.	1893.	Previous Year.	1893.	Previous Year.	1893.	Previous Year.	1893.		
Tons.	Tons.	Rs.	Rs.	Tons.	Tons.	Rs.	Rs.	Tons.	Tons.	Rs.	Rs.		
2,615	11,005	15,887	69,974	5,915	8,222	6,101	7,804	—	568	—	413	I.	
19,603	65,249	1,28,508	4,62,349	14,814	15,924	81,856	92,974	157	215	1,104	1,769	II.	
15,328	16,740	1,96,223	2,05,973	16,621	15,885	187,995	1,92,012	4,770	3,696	61,247	55,857	III.	
525	1,695	5,601	13,238	2,344	2,286	18,105	18,967	173	164	3,516	4,004	IV.	
13,504	13,531	90,518	81,629	9,829	9,373	46,726	59,947	10,919	10,035	1,10,845	72,396	V.	
151,923	255,187	6,43,793	11,22,186	240,423	2,92,176	8,91,899	12,50,130	272,227	303,124	12,08,990	13,19,823	VI.	
5,895	5,670	45,116	43,341	6,416	6,266	54,507	65,787	738	587	9,765	7,985	VII.	
491	260	5,255	2,854	144	121	1,338	1,154	11	29	205	450	VIII.	
4,949	10,479	30,183	64,960	5,172	5,867	38,401	37,842	3,311	4,005	18,490	18,236	IX.	
25	36	150	216	159	178	1,303	1,010	187	465	3,288	4,132	X.	
278	316	2,632	2,365	67	65	779	806	18	68	307	1,438	XI.	
5,791	7,266	36,123	46,025	4,143	3,306	22,146	23,187	1,580	1,393	23,775	23,609	XII.	
12,021	15,624	1,08,339	1,35,431	17,953	17,589	1,13,140	1,16,273	3,077	3,638	34,023	34,494	XIII.	
16,691	21,416	91,216	1,17,204	14,986	16,295	74,519	76,116	5,748	6,148	62,483	62,871	XIV.	
24,975	72,201	1,10,797	3,66,744	61,880	48,962	2,04,533	1,85,848	4,758	5,738	21,973	25,284	XV.	
2	2	45	53	—	—	3	—	2	10	35	206	XVI.	
266	402	3,175	4,391	465	650	6,133	11,019	50	168	822	3,163	XVII.	
42,357	43,378	3,32,000	3,15,260	32,340	27,226	1,60,656	1,48,384	39,937	36,688	3,08,912	3,20,394	XVIII.	
26,240	4,019	1,02,814	17,047	9,290	6,884	27,902	13,838	11,670	53,609	35,957	78,898	XIX.	
38,972	36,853	2,11,594	2,11,182	59,391	60,216	1,90,785	1,99,808	10,982	11,717	66,573	73,538	XX.	
159	280	1,386	1,877	327	387	1,679	1,789	—	—	—	—	XXI.	
229	284	2,633	4,034	111	43	1,389	971	167	137	4,455	4,922	XXII.	
4	4	71	45	2	3	15	65	98	43	3,644	1,919	XXIII.	
22,030	27,252	2,10,614	2,45,053	11,927	13,793	86,275	1,06,052	5,875	3,239	45,035	25,517	XXIV.	
16,860	17,523	38,364	48,181	80,724	88,440	84,891	92,855	5,419	3,130	21,792	10,520	XXV.	
18,971	28,132	1,16,751	1,75,414	55,693	65,742	2,27,958	2,94,564	4,595	4,773	38,695	32,088	XXVI.	
18	47	304	939	340	422	1,422	2,196	1,177	1,017	10,598	8,642	XXVII.	
29,343	37,267	1,09,860	1,40,707	54,143	45,837	72,563	71,454	62,126	48,689	2,70,307	1,62,914	XXVIII.	
3,529	5,877	32,273	53,543	6,890	6,327	38,047	45,974	2,149	1,941	23,518	20,702	XXIX.	
}	{ 330 }	{ 15,927 }	{ 8,076 }	12	39	62	796	}	63	21	1,402	460	XXX.
				281	177	3,078	1,975						XXXI.
				27,947	45,899	221,909	2,62,413						94,640
502,703	744,956	29,10,421	42,33,715	807,012	850,940	80,81,739	36,04,395	499,508	582,351	26,26,565	(c) 28,57,298	Total.	

(a) Including the Guntakal-Mysore Frontier, the Southern Mahratta (Mysore Section), the Kolhapur, the Yesvantpur-Mysore Frontier, and the Mysore Nanjangud Railways.

(b) Including the Pondicherry Railway.

(c) Including Rs. 8,462 on account of earnings from steam boat traffic.

APPENDIX G.—STATEMENT showing the QUANTITIES of the principal COMMODITIES carried, and compared with the

Classification No.	Description of Commodity.	METRE							
		ASSISTED							
		XLVI.—Deoghur.				XLVII.—Rohilkund and Kumaon (Company's Section) (a).			
		Quantity.		Earnings.		Quantity.		Earnings.	
		Previous Year.	1893.	Previous Year.	1893.	Previous Year.	1893.	Previous Year.	1893.
		Tons.	Tons.	Rs.	Rs.	Tons.	Tons.	Rs.	R .
I.	Coal and coke carried for the public and foreign railways.	—	—	—	—	78	111	139	156
II.	Cotton, raw	—	—	—	—	79	84	483	498
III.	Cotton, manufactured	—	—	—	—	2,635	2,721	12,211	12,897
IV.	Cotton piece-goods	—	—	—	—	250	285	1,467	1,608
V.	Drugs and chemicals	—	—	—	—	394	458	1,541	1,953
VI.	Grain and pulse	—	—	—	—	50,919	57,445	1,01,226	110,855
VII.	Hides and skins	—	—	—	—	725	890	1,866	2,277
VIII.	Horns	—	—	—	—	67	84	284	477
IX.	Jute	—	—	—	—	1,682	1,958	4,896	5,081
X.	Lac	—	—	—	—	71	122	304	564
XI.	Leather, manufactured	—	—	—	—	56	81	328	460
XII.	Liquors	—	—	—	—	1,265	1,051	6,087	5,811
XIII.	Metals	—	—	—	—	3,482	3,479	15,664	16,408
XIV.	Oils	—	—	—	—	1,297	1,580	4,253	5,538
XV.	Oil-seeds	—	—	—	—	15,020	16,374	87,292	41,709
XVI.	Opium	—	—	—	—	72	70	657	532
XVII.	Paper and paste-board	—	—	—	—	25	44	150	242
XVIII.	Provisions	—	—	—	—	3,478	3,262	25,762	21,008
XIX.	Railway plant and rolling stock carried for the public and foreign railways.	—	—	—	—	—	—	—	—
XX.	Salt	—	—	—	—	10,286	10,716	22,723	23,988
XXI.	Saltpetre, &c.	—	—	—	—	97	71	230	148
XXII.	Silk, raw	—	—	—	—	—	—	—	—
XXIII.	Silk piece-goods	—	—	—	—	—	—	3	—
XXIV.	Spices	—	—	—	—	909	809	3,345	3,472
XXV.	Stone and lime	—	—	—	—	2,090	14,297	4,293	20,409
XXVI.	Sugar	—	—	—	—	33,859	20,672	82,719	55,001
XXVII.	Tea	—	—	—	—	176	306	1,286	2,657
XXVIII.	Timber	—	—	—	—	6,561	10,160	16,768	28,693
XXIX.	Tobacco	—	—	—	—	702	1,021	3,556	4,596
XXX.	Wool, raw	—	—	—	—	100	165	483	854
XXXI.	Wool, manufactured	—	—	—	—	—	—	—	—
XXXII.	All other articles of merchandise	—	—	—	—	39,228	53,915	89,875	1,3,619
	Total	—	—	—	—	182,043	201,871	4,39,881	4,56,511

(a) Including the Rohilkund and Kumaon (Lucknow-Bareilly section).

the EARNINGS therefrom, on the STANDARD and METRE GAUGE RAILWAYS during the Year 1893, as previous Year—*continued*.

GAUGE—*continued*.

COMPANIES.

LINE OWNED BY NATIVE
STATE AND WORKED
BY COMPANY.

Classifica-
tion No.

XLVIII.—Bengal Dochars.

XLIX.—Dibrā-Sadiya.

LI.—The Gaekwar's Melsāna.

Quantity.

Earnings.

Quantity.

Earnings.

Quantity.

Earnings.

Previous
Year.

1893.

Previous
Year.

1893.

Previous
Year.

1893.

Previous
Year.

1893.

Previous
Year.

1893.

Previous
Year.

1893.

Tons.	Tons.	Rs.	Rs.	Tons.	Tons.	Rs.	Rs.	Tons.	Tons.	Rs.	Rs.	
	606		3,256	156,820	158,320	1,98,219	1,87,680	7	11	15	22	I.
	2		14	—	—	—	3	1,433	794	3,154	2,404	II.
	147		970	3	43	22	954	1,213	1,477	3,080	3,893	III.
	9		61	193	186	1,325	1,332	33	44	109	79	IV.
	—		—	—	5	1	74	250	264	427	440	V.
	964		5,051	3,422	9,532	62,126	66,296	19,134	33,312	25,632	50,464	VI.
	—		1	1	1	12	9	188	206	509	542	VII.
	—		—	—	—	—	—	—	2	—	2	VIII.
	68		246	116	110	1,808	1,391	503	695	781	1,052	IX.
	—		—	—	—	—	—	—	—	—	1	X.
	—		—	1	8	9	6	29	49	85	118	XI.
	31		233	124	94	1,933	1,340	3	5	12	20	XII.
	1,055		7,819	2,715	3,032	19,749	21,498	890	1,084	1,213	1,461	XIII.
	134		968	269	353	2,963	2,240	657	1,149	1,836	2,797	XIV.
	26		163	—	—	—	1	18,329	36,372	13,533	32,236	XV.
	—		—	—	—	—	5	7	19	40	92	XVI.
	—		—	12	3	30	39	—	8	—	12	XVII.
	111		986	641	513	7,302	4,917	1,338	1,514	2,046	2,404	XVIII.
	—		—	—	—	—	—	513	—	728	—	XIX.
	158		829	206	215	1,891	1,859	30,122	35,704	44,942	55,603	XX.
	—		—	—	—	—	—	875	654	1,147	798	XXI.
	—		—	—	—	—	—	—	—	—	—	XXII.
	—		—	—	—	—	—	5	3	14	9	XXIII.
	10		61	2	21	31	333	233	314	362	672	XXIV.
	8		63	1,476	1,036	6,383	3,272	1,023	1,173	2,070	1,931	XXV.
	48		321	23	43	334	454	8,211	7,735	14,037	11,606	XXVI.
	6,478		58,392	4,400	5,202	39,880	46,137	11	12	20	28	XXVII.
	37		204	7,533	6,054	15,278	11,023	2,750	2,870	3,469	3,686	XXVIII.
	8		44	42	63	616	962	366	274	763	551	XXIX.
	—		—	—	—	—	—	—	—	—	—	XXX.
	—		—	—	—	—	—	133	62	373	196	XXI.
	1,707		13,311	7,212	6,784	36,311	33,930	5,835	6,356	7,825	10,571	XXXII.
	—		—	—	—	—	—	—	—	—	—	—
	11,607		92,993	190,211	1,91,631	3,96,229	3,85,755	93,591	132,662	1,28,177	1,83,632	—

APPENDIX G.—STATEMENT showing the QUANTITIES of the principal COMMODITIES carried, and compared with the

Classification Number.	Description of Commodity.	METRE							
		LINES OWNED AND WORKED							
		LV.—Jodhpore-Bikaner.							
		Jodhpore Section.				Bikaner Section.			
		Quantity.		Earnings.		Quantity.		Earnings.	
		Previous Year.	1893.	Previous Year.	1893.	Previous Year.	1893.	Previous Year.	1893.
		Tons.	Tons.	Rs.	Rs.	Tons.	Tons.	Rs.	Rs.
I.	Coal and coke carried for the public and foreign railways.	276	115	1,271	1,086	23	68	38	149
II.	Cotton, raw -	36	107	663	1,080	9	10	78	90
III.	Cotton, manufactured -	1,281	1,907	13,868	17,413	322	246	1,431	1,481
IV.	Drugs and chemicals -	162	118	1,736	1,117	10	11	69	68
V.	Dyes and tans -	307	367	3,314	3,474	23	36	180	200
VI.	Grain and pulse -	70,095	12,045	2,79,732	54,952	12,849	2,097	18,491	5,805
VII.	Hides and skins -	242	383	2,280	2,926	26	42	154	168
VIII.	Horns -	—	—	—	2	—	—	—	—
IX.	Jute -	1,005	1,168	10,997	9,914	133	125	629	508
X.	Lac -	—	14	—	163	—	6	—	26
XI.	Leather, manufactured -	46	116	616	1,382	10	9	60	61
XII.	Liquors -	21	5	236	97	3	1	19	11
XIII.	Metals -	1,298	1,342	14,533	9,892	293	185	1,668	753
XIV.	Oils -	223	279	2,069	2,094	53	57	250	261
XV.	Oil-seeds -	1,756	3,137	7,862	14,079	259	137	891	41 4
XVI.	Opium -	54	73	886	879	16	7	181	54
XVII.	Paper and paste-board -	—	35	—	286	—	10	—	48
XVIII.	Provisions -	2,008	1,932	23,062	17,780	599	534	3,080	2,231
XIX.	Railway plant and rolling stock carried for the public and foreign railways.	—	—	—	—	—	—	—	—
XX.	Salt -	10,030	18,347	49,675	1,14,484	26	116	68	263
XXI.	Saltpetre, &c. -	95	261	847	1,875	26	161	92	452
XXII.	Silk, raw -	—	—	—	—	—	—	—	—
XXIII.	Silk piece-goods -	—	—	2	3	—	—	1	—
XXIV.	Spices -	294	637	2,859	6,127	56	140	300	903
XXV.	Stone and lime -	4,788	6,095	7,091	7,580	2,913	4,036	4,092	4,635
XXVI.	Sugar -	7,554	8,629	70,632	70,403	723	1,328	3,676	4,623
XXVII.	Tea -	2	10	19	55	—	—	1	—
XXVIII.	Timber -	675	565	7,115	4,066	198	160	1,059	508
XXIX.	Tobacco -	655	700	6,744	5,542	67	43	424	338
XXX.	Wool, raw -	1,587	2,544	17,166	20,973	126	145	843	901
XXXI.	Wool, manufactured -	—	—	—	—	—	—	—	—
XXXII.	All other articles of merchandise -	6,952	4,676	41,592	23,478	798	536	3,284	2,198
	Total	111,302	60,107	5,03,597	3,98,202	19,560	10,255	40,969	27,049

the EARNINGS therefrom, on the STANDARD and METRE GAUGE RAILWAYS during the Year 1893, as previous Year—concluded.

GAUGE—concluded.

BY NATIVE STATES.								FOREIGN LINE.				Classification No.
I, IV.—Bhavnagar-Gondal-Junagarh-Porbandar.				LVII.—Jetalsar-Rajkot.				LX.—West of India Portuguese.				
Quantity.		Earnings.		Quantity.		Earnings.		Quantity.		Earnings.		
Previous Year.	1893.	Previous Year.	1893.	Previous Year.	1893.	Previous Year.	1893.	Previous Year.	1893.	Previous Year.	1893.	
Tons.	Tons.	Rs.	Rs.	Tons.	Tons.	Rs.	Rs.	Tons.	Tons.	Rs.	Rs.	
1,395	2,152	3,940	6,278	—	—	—	—	—	19	—	5	I.
27,582	47,196	2,04,122	3,34,580	—	—	—	—	6,960	18,492	25,129	68,330	II.
2,180	2,567	18,325	21,331	—	—	—	—	1,632	1,800	7,339	7,226	III.
94	85	1,116	1,016	—	—	—	—	31	46	161	231	IV.
1,139	920	7,231	6,039	—	—	—	—	11	36	52	155	V.
39,661	35,824	1,54,955	1,36,931	—	—	—	—	8,334	21,499	25,442	64,294	VI.
632	696	5,425	6,498	—	—	—	—	17	31	64	82	VII.
22	10	151	68	—	—	—	—	—	—	—	—	VIII.
1,302	2,033	6,384	9,709	—	—	—	—	3	9	13	40	IX.
18	19	133	137	—	—	—	—	—	—	—	—	X.
40	44	483	496	—	—	—	—	—	—	—	—	XI.
74	102	793	1,055	—	—	—	—	403	444	1,528	1,684	XII.
2,394	3,620	16,676	23,037	—	—	—	—	1,263	1,311	4,862	5,494	XIII.
3,759	4,879	20,746	25,225	—	—	—	—	6,310	11,066	18,464	31,156	XIV.
9,025	14,399	35,174	55,140	—	—	—	—	6,586	19,752	21,429	63,669	XV.
3	13	80	268	—	—	—	—	—	—	—	—	XVI.
82	124	751	981	—	—	—	—	—	—	—	—	XVII.
7,994	8,958	46,322	54,340	—	—	—	—	10	30	42	132	XVIII.
1,455	5,845	5,127	20,929	—	—	—	—	—	—	—	—	XIX.
4,483	4,705	8,297	8,306	—	—	—	—	20,171	19,584	50,870	47,047	XX.
17	35	160	270	—	—	—	—	—	—	—	—	XXI.
1	1	30	22	—	—	—	—	2	—	15	2	XXII.
2	1	38	13	—	—	—	—	—	—	—	—	XXIII.
282	400	2,197	2,798	—	—	—	—	386	885	1,812	3,868	XXIV.
23,817	31,823	15,332	22,332	—	—	—	—	63	—	9	—	XXV.
6,682	6,356	33,851	31,834	—	—	—	—	599	716	2,201	2,653	XXVI.
6	4	61	43	—	—	—	—	2	2	13	15	XXVII.
11,900	16,498	65,679	90,744	—	—	—	—	590	1,202	1,661	3,664	XXVIII.
639	532	4,312	3,598	—	—	—	—	199	307	699	1,132	XXIX.
340	405	2,021	2,356	—	—	—	—	—	—	—	—	XXX.
7	13	83	113	—	—	—	—	35	30	171	125	XXXI.
5,149	7,655	35,826	50,421	—	—	—	—	16,154	18,419	50,501	59,853	XXXII.
152,076	197,374	6,94,360	9,17,208	—	—	—	—	69,761	115,680	2,12,467	3,61,357	Total.

APPENDIX H.—SCHEDULE of RAILWAYS lately SURVEYED, or at present under SURVEY, or recently put forward for consideration.

Railway.	Length.	Estimated Cost.*	Railway.	Length.	Estimated Cost.*
	Miles.	Rs.		Miles.	Rs.
1. Singia - Madareepore-Chandpur.	79	1,04,50,000	21. Rámpur-Rámnagar -	52	25,00,000
2. Sultanpur-Bogra-Nya-Serajgunj.	38	17,00,000	22. Ghaziabad-Moradabad (or Chandausi).	130	1,10,00,000
3. Cuttack-Calcutta -	254	3,94,00,000	23. Hurdwar-Dehra -	34	28,00,000
4. Sini-Midnapore -	100	1,02,00,000	24. Kalka-Simla -	46½ (alternative 57 miles).	86,00,000
5. Palamow-Sini (or Chandil).	174	1,77,00,000	25. Delhi-Bhátinda-Baháwalpur.	400	2,77,50,000
6. Moghal Sarai-Palamow (Daltonganj).	150	1,80,00,000	26. Ferozepore-Ludhiána	76	60,00,000
7. Bhágapur - Bowsee (Sonthal Pergannahs).	42	—	27. Wazirabad-Mooltan -	200	90,00,000
8. Luckeeserai-Gya, with branch to Bakh-tiárpur).	100	—	28. Kotri-Rohri -	206	1,60,00,000
9. Garhara-Monghyr -	40	16,00,000	29. Umarkot-Pachpadra -	186	1,72,00,000
10. Segowlie-Raksal Branch, Tirhoot Railway.	17	—	30. Deesa-Umarkot -	235	2,35,00,000
11. Hajeeepore-Begamsarai	45	18,00,000	31. Ajmere - Kucháman-Rewári.	180	90,00,000
12. Bhatui-Benares -	90	54,00,000	32. Rutlam-Muttra with Ujjain branch	400 60	3,06,00,000 55,00,000
with following branches—			33. Ahmedabad-Prantij -	50	30,00,000
Barhaj -	12	4,80,000	34. Surat - Nandurbár-Jalgaon, with branch to Amalner.	290	2,30,00,000
Azamgarh -	25	10,00,000	35. Raipur-Senpur -	160	1,91,00,000
Gházípur -	26	10,40,000	36. Sambalpur-Khurda -	190½	2,37,00,000
Jaunpur -	28	10,80,000	37. Arsikeri-Mysore, Hassan-Mangalore, and Nanjangúd-Erode.	319	2,50,00,000
Ballia -	42	16,80,000	38. Tinnevely-Quilon -	106	93,00,000
13. Gonda-Balrámpur-Tulsi-pur.	42	18,00,000	39. Shoranur-Quilon -	60	66,00,000
14. Nánpara-Katewa -	40	8,25,000	40. Calicut-Cannamore -	55	60,50,000
15. Gogra bridge, with approaches.	—	30,75,000	41. Madura viá Pámban to Rameswaram. *	91	55,00,000
16. Lucknow-Cawnpore -	43	24,00,000	42. Bezwada-Madras -	291	2,51,00,000
17. Lucknow City Branch	—	4,00,000	43. Bezwada-Masulipatam	50	41,50,000
18. Rámnagar Junction to Lucknow.	34	16,00,000	44. Chittagong - Akyab-Minhla.	420	3,85,50,000
19. Rae-Bareli-Benares -	139	83,00,000	45. Mandalay-Kunlon -	260	2,34,00,000
20. Bareilly-Soron, with bridge at Soron.	60	65,00,000			

* The estimated cost of each project here given is taken from such information as is at present available, but the amounts will require further investigation in every case before construction is undertaken.

I N D E X.

	Page.	Paragraph.
Accidents—		
Accidents on the—		
Bengal-Nágpur Railway	194	3
Bombay, Baroda and Central India Railway	195	8
Burma (State) Railway	196	13
Dibru-Sadiya Railway	196	14
Eastern Bengal (State) Railway	194	6
East Indian Railway system	193	2
Great Indian Peninsula Railway	195	7
Jodhpore-Bickaneer Railway	196	15
Madras Railway	195	9
Morvi Railway	197	16
North-Western (State) Railway	194	4
Oudh and Rohilkhand (State) Railway	194	5
Rajputana-Malwa Railway	195	10
Southern Mahratta Railway system	196	11
South Indian Railway	196	12
Statement No. 40, showing the number of persons killed and injured in connection with railway working during the year 1893 as compared with the average of the previous years	193	1
Statement No. 41, showing the number of, to trains, rolling stock, permanent-way, &c., and the casualties resulting therefrom during 1893 as compared with the average of two previous years	198	17
Statistical figures relating to	198	17
Ahmedabad-Dholera Railway survey	49	43
Ahmedabad-Prantij Railway	49	44
Annual gain or loss—		
Statement No. 5, showing the direct, to the State from railway outlay since 1858	24 & 25	17
Aoula-Budáon Railway survey	46	29
Appendices—		
A. Additions to open mileage from the 1st April 1893 to the 31st March 1894	200	—
B. Extensions of line sanctioned from the 1st April 1893 to the 31st March 1894	201	—
C. Statement showing the gauge and classification of lines and the lengths of lines sanctioned and open for traffic on the 31st March 1894	202-206	—
D. Progress made in the opening of railways year by year from the commencement	208-215	—
E. Length of railways open for public traffic at the end of each year from the commencement	216-223	—
F. Statement showing total approximate earnings from the 1st January to the 31st March 1894, as compared with the actuals of the corresponding periods of 1892 and 1893	224 & 225	—
G. Statement showing the quantities of the principal commodities carried and the earnings therefrom on the standard and metre gauge railways during 1893, as compared with the previous year	226-239	—
H. Schedule of railways lately surveyed, at present under survey, or recently put forward for consideration	240	—
Approximate earnings—		
Comparison of, for the first quarter of 1894 with the actuals of the corresponding periods of 1892 and 1893	18	13
Statement showing the total, on the standard and metre gauge railways, from the 1st January to the 31st March 1894, as compared with the actuals of the corresponding periods of 1892 and 1893	224 & 225	App. F.
Assam—		
Petroleum in	54	4
Assam-Bengal Railway—		
Works completed and in progress	34	23
Automatic vacuum brakes—		
Fitting of, to locomotive and vehicle stock on standard and metre gauge railways	66	10
Baluchistan petroleum operations	62	15
Bareilly-Rámpur-Moradabad section, Oudh and Rohilkhand (State) Railway—		
Works completed and in progress	27	5
Bareilly-Soron Railway survey	45	23
Begamsarai-Hajeeapore survey	48	38
Bengal and North-Western Railway system—		
Begamsarai-Hajeeapore survey	48	38
Coaching fares	151	9
Flood damages	189	7

	Page.	Paragraph.
Bengal and North-Western Railway system—continued.		
Fuel consumption - - - - -	165	15
Garhara-Monghyr-Khagaria survey - - - - -	48	38
Gonda-Balrampur-Ootrawlia-Tulsipur extension of - - - - -	48	39
Goods rates - - - - -	153	21
Revenue earnings and expenditure - - - - -	119	22
Surveys in connection with the linking-up of the metre gauge systems— - - - -	44	22
Works completed and in progress on the Tirhoot section - - - - -	35	25
Bengal Central Railway—		
Revenue earnings and expenditure - - - - -	116	13
Works completed and in progress - - - - -	27	3
Bengal-Dooars Railway—		
Revenue earnings and expenditure - - - - -	122	30
Works completed and in progress - - - - -	35	27
Bengal-Nágpur Railway—		
Accidents - - - - -	194	3
Coaching fares - - - - -	150	4
Construction of a bridge of boats across the Mahanuddy - - - - -	15	6
Fuel consumption - - - - -	162	9
Goods rates - - - - -	151	11
Revenue earnings and expenditure - - - - -	112	6
Works completed and in progress - - - - -	32	14
Bezwada-Godávari section, East Coast (State) Railway—		
Completion, opening, and working of the - - - - -	14	6
Bezwada Madras Railway survey - - - - -	34	22
Bezwada Masulipatam Railway - - - - -	44	21
Bhaganwala Colliery - - - - -	51	56
Bhagwangola— - - - -	59	11
Connections with - - - - -	47	32
Bhánagarh-Gondal-Junágarh-Porbandar Railway—		
Adoption of revised rates for the carriage of coal and railway materials - - - - -	150	1
Flood damages - - - - -	191	14
Fuel consumption - - - - -	165	18
Goods rates - - - - -	154	25
Revenue earnings and expenditure - - - - -	123	34
Works completed and in progress - - - - -	36	34
Bhopal-Itársi Railway—		
Works completed and in progress - - - - -	31	11
Bhopal-Ujjain Railway—		
Works in progress - - - - -	31	12
Bína-Guna Railway—		
Works in progress - - - - -	32	13
Bombay, Baroda, and Central India Railway—		
Accidents - - - - -	195	8
Coaching fares - - - - -	150	6
Flood damages - - - - -	189	5
Fuel consumption - - - - -	164	11
Goods rates - - - - -	153	19
Refusal to adopt revised rates for the carriage of coal and railway materials - - - - -	150	1
Revenue earnings and expenditure - - - - -	117	17
Works completed and in progress - - - - -	32	16
Brakes—		
See “Automatic vacuum brakes.”		
Bridge—		
Completion and opening of the Ravi - - - - -	15	6
Opening of a metre-gauge track across the Kistna - - - - -	28	7
Particulars regarding the Mahanuddy - - - - -	16	7
Burma State Railway— - - - -	44	20
Accidents - - - - -	196	13
Flood damages - - - - -	191	11
Fuel consumption - - - - -	166	21
Goods rates - - - - -	153	23
Results of survey from Meiktila to Myingyan - - - - -	51	57
Revenue earnings and expenditure - - - - -	121	27
Works completed and in progress - - - - -	38	40
Calcutta Port Commissioners' Railway—		
Goods rates - - - - -	152	16
Revenue earnings and expenditure - - - - -	116	14
Works completed - - - - -	27	4
Calicut-Cannanore Railway	48	34

	Page.	Paragraph.
Capital—		
Allocation of capital expenditure on Indian railways, open and under construction and survey - - - - -	77	1
Cost of collieries and surveys completed and in progress - - - - -	84 & 85	—
Cost of railways - - - - -	16	8
Expenditure on the several gauges of railway during 1893 - - - - -	92 & 93	—
Statement No. 6B showing, locked up in stores on the standard and metre gauge railways on the 31st December 1893 as compared with the 31st December 1892 - - - - -	75 & 76	7
Statement No. 7, showing the total, raised by Guaranteed Railways up to the 31st December 1893 - - - - -	77	2
Statement No. 8, showing the total, raised for State lines leased to companies up to the 31st December 1893 - - - - -	78	2
Statement No. 9, showing debenture loans on the 31st December 1893 - - - - -	79	3
Statement No. 10, showing expenditure in England and in India on Indian State Railways appropriated to the various undertakings to the 31st December 1893 - - - - -	80-87	—
Statement No. 11, showing, authorised, raised, and withdrawn for guaranteed and subsidised railway and State lines leased to companies up to the 31st December 1893 - - - - -	88	—
Statement No. 12, showing, received from and withdrawn by guaranteed and subsidised railways and State lines leased to companies during 1893 - - - - -	89	—
Statement No. 13, showing annual withdrawals by guaranteed railways out of, from the commencement to the 31st March 1894 - - - - -	90	—
Statement No. 14, showing the annual withdrawals on account of the Bengal Central, Southern Mahratta, Mysore, Bengal-Nágpur, Indian Midland, Lucknow-Bareilly, and the Assam-Bengal Railways from the commencement to the 31st March 1894 - - - - -	91	—
Statement No. 15, showing the annual withdrawals by the Rohilkund and Kumaon Railway Company from the commencement to the 31st March 1893 - - - - -	91	—
Statement No. 16, showing the outlay on open lines of railway on the 31st December 1893 and the average cost per mile, excluding branches and extensions of the open system still under construction - - - - -	92 & 93	—
Statement No. 17 showing the net earnings on the principal railways and their percentage on, outlay for the last five years - - - - -	101	17
Statement No. 22, showing, expenditure, net revenue, &c., on guaranteed railways from 1870 - - - - -	109	13
Carriages fitted with hooks or racks—		
Statement showing number of, for soldiers' rifles - - - - -	69	9
Casualties—		
Numerical return of, whether by death, resignation, and discharge, or dismissal amongst European and East Indian employés on the standard and metre gauge railways (open lines only) during 1893 (Statement No. 34) - - - - -	174 & 175	—
Percentage of, during 1892 and 1893 - - - - -	170	2
Ceylon—		
Connections with - - - - -	51	55
Chittagong-Akyab-Minhla Railway survey - - - - -	45	25
Classification of railways - - - - -	13	1
Cleaning of horse-boxes and cattle-trucks - - - - -	68	16
Coaching fares—		
See "Fares and rates."		
Coaching Traffic—		
Particulars regarding, on all railways for 1893 as compared with 1892 - - - - -	94	4
Total number of passengers carried and the earnings from, on the standard and metre gauge railways during 1893 - - - - -	130-133	—
Coal—		
Adoption of revised rates for the carriage of, on certain railways - - - - -	150	1
Explorations for, at Bhaganwala (Salt range) - - - - -	59	11
Explorations for, at Telanpali, near the Eeb River on the Bengal-Nágpur Railway - - - - -	57	8
Fields at Quetta - - - - -	61	14
Statement showing the quantity in tons of, produced in India from 1880 to 1893 - - - - -	62	16
Collieries and oil wells—		
Baluchistan petroleum operations - - - - -	62	15
Bhaganwala Colliery - - - - -	59	11
Coal-field at Telanpali, near the Eeb river - - - - -	57	8
Dandot Colliery - - - - -	58	10
Eastern Bengal (State) Railway—		
Experiments with Daling field (Dooars) coal, on the - - - - -	53	2
Khost Colliery - - - - -	60	12
Kurhurbaree and Serampore Collieries - - - - -	53	1
Makum Collieries - - - - -	54	3
Mohpani Colliery - - - - -	55	6
Petroleum in Assam - - - - -	54	4
Quetta coalfields - - - - -	61	14
Sharigh colliery - - - - -	61	13
Singareni Colliery - - - - -	57	9
Umaria Colliery - - - - -	56	7
Warora Colliery - - - - -	54	5

	Page.	Paragraph
Committee of locomotive and carriage and waggon superintendents in India	68	14
Commodities—		
Statement No. 24 showing the summary of the principal, carried on the standard and metre gauge railways during 1892 and 1893	125	1
Statement showing the quantities of the principal, carried and the earnings therefrom on the standard and metre gauge railways during the year 1893 as compared with the previous year	226-239	App. G.
Conference of railway delegates	16	7
Cooch Behar Railway—		
Completion and opening of	15	6
Works completed	35	26
Coonoor-Ootacamund Railway survey	51	53
Cost—		
Average, per mile of railway open	16	8
Average, per mile of single track, including sidings	17	8
Statement No. 16, showing the capital, on open lines of railway on the 31st December 1893, and the average, per mile excluding branches and extensions of the open system still under construction	92 & 93	—
Total capital, of all railways up to the 31st of December 1893	16	8
Couplings—		
Particulars regarding the provision of, to vehicles of the standard and metre gauge railways	67	11
Cuddalore-Pondicherry Railway survey	51	54
Cuttack-Midnapur-Calcutta Railway survey	40	1
Daling Field (Dooars) coal—		
Experiments on the Eastern Bengal (State) Railway with	53	2
Dandot Colliery	58	10
Delhi-Minchinabad-Bahawalpur Railway survey	41	5
Deoghur Railway—		
Revenue earnings and expenditure	121	28
Dera Ismail Khan and Dera Ghazi Khan—		
Ferry lines to serve	42	10
Dera Ismail Khan, Murtiza Section, Zhob Valley Railway—		
Construction of, postponed	42	7
Diagram, graphic—		
Showing open mileage, capital outlay, gross earnings, working expenses, and net earnings of all railways from the commencement of operations to the end of 1893	17	9
Dibru-Sadiya Railway—		
Accidents	196	14
Flood damages	191	12
Revenue earnings and expenditure	122	31
Works completed	35	24
Earnings—		
See "Approximate earnings."		
See "Gross earnings."		
See "Net earnings."		
East Coast (State) Railway—		
Coaching fares	151	8
Completion and opening of the Bezwada, Godavari and Rajahmundry-Vizianagram sections of the Cocanada and Vizagapatam branches	14	6
Flood damages	189	4
Fuel consumption	164	14
Goods rates	152	17
Particulars regarding the bridges over the Godavari and the Mahanuddy	44	20
Revenue earnings and expenditure	117	15
Works completed and in progress	34	22
Eastern Bengal (State) Railway—		
Accidents	194	6
Experiments with Daling field (Dooars) coal	53	2
Flood damages	188	3
Fuel consumption on the, including the Bengal Central Railway	160	5
Goods rates	152	15
Revenue earnings and expenditure	115	12
Works in progress	26	2
East Indian Railway—		
Accidents	193	2
Branch lines from Bally station to the Hooghly below the Botanical Gardens and from Háthras Road to Háthras City	46	27
Fuel consumption	160	4
Goods rates	151	10
Introduction of automatic vacuum brakes on the mail trains of	15	7
Kurhurbaree and Serampore collieries	53	1
Revenue earnings and expenditure	112	5
Works completed and in progress	26	1

	Page.	Paragraph.
Expenses—		
<i>See</i> "Working expenses."		
Exports of wheat—		
Total tonnage of wheat exported from Calcutta, Bombay, and Kurrachee during the last seven years	111	3
Extensions of line—		
Sanctioned from the 1st April 1893 to the 31st March 1894	201	App. B.
Sanction to the construction of	14	4
Fares and Rates—		
Alterations in coaching fares on the—		
Bengal and North-Western Railway system	151	9
Bengal-Nágpur Railway	150	4
Bombay, Baroda, and Central India Railway system	150	6
East Coast (State) Railway	151	8
Indian Midland Railway system	150	5
Oudh and Rohilkhand (State) Railway	151	7
Alterations in goods rates on the—		
Bengal and North-Western Railway system	153	21
Bengal-Nágpur Railway	151	11
Bhánagar-Gondal-Junágarh-Porbandar Railway	154	25
Bombay, Baroda, and Central India Railway system	153	19
Burma (State) Railway	153	23
Calcutta Port Bommissioners' Railway	152	16
East Coast (State) Railway	152	17
Eastern Bengal (State) Railway system	152	15
East Indian Railway system	151	10
Great Indian Peninsula Railway system	152	18
Indian Midland Railway system	152	12
Jodhpore-Bickaneer Railway	154	24
North-Western (State) Railway system	152	13
Oudh and Rohilkhand (State) Railway	152	14
Southern Mahratta Railway system	153	20
South Indian Railway	153	22
Revision of rates for the carriage of coal and railway materials	150	1
Statement No. 31, showing the passenger fares and goods rates in pies on the standard and metre gauge railways on the 31st December 1893	156-159	2
Females—		
Statement No. 6A, showing the number of carriages fitted with retiring accommodation for	74	12
Ferozepore-Ludhiána Railway survey	47	30
Ferry lines to serve Dera Ismail Khan and Dera Gházi Khan	42	10
Financial results—		
Comparison of, of working State railways by State agency, excluding non-commercial sections	99	15
Explanatory remarks regarding, to the State in its connection with Indian railways for 1892-93 and 1893-94	19	17
Statements Nos. 1 to 4, showing the details of, to the State, of working for 1891-92 of—		
Guaranteed railways (No. 1.)	21	—
State lines leased to companies (No. 2.)	21	—
State railways (commercial) (No. 2.)	22	—
State railways (military) (No. 3A.)	23	—
State Railways worked by companies (No. 4.)	23	—
Statement No. 5 showing the direct annual gain or loss to the State from railway outlay since 1858	24 & 25	—
Flood damages—		
Particulars of, on—		
Bengal and North-Western Railway system	189	7
Bhánagar-Gondal-Junágarh-Porbandar Railway	191	14
Bombay, Baroda, and Central India Railway	189	5
Burma (State) Railway	191	11
Dibru Sadiya Railway	191	12
East Coast (State) Railway	189	4
Eastern Bengal (State) Railway	188	3
Gaekwar's Mehsána Railway	191	13
Jetalsar-Rájkot Railway	192	15
Madras Railway	189	6
North-Western (State) Railway	188	2
Rajputana-Malwa Railway	190	8
Southern Mahratta Railway system	190	9
South Indian Railway	190	10

	Page.	Paragraph.
Fuel—		
Explanatory remarks on the total consumption of, during 1893	160	2—3
Source of supply and price at place of delivery of, used on—		
Bengal and North-Western Railway system	165	15
Bengal-Nágpur Railway	162	9
Bhāvnagar-Gondal-Junágarh-Porbandar Railway	165	18
Bombay, Baroda, and Central India Railway	164	11
Burma (State) Railway	166	21
East Coast (State) Railway	164	14
Eastern Bengal (State) Railway system	160	5
East Indian Railway	160	4
Great Indian Peninsula Railway system	163	10
Indian Midland Railway	162	8
Jodhpore-Bickaneer Railway	165	17
Madras Railway	164	12
Nizam's Guaranteed (State) Railway system	164	13
North-Western (State) Railway system	161	7
Ondh and Rohilkhand (State) Railway	161	6
Rajputana-Malwa Railway	165	16
Southern Mahratta Railway system	165	19
South Indian Railway	166	20
Statement No. 32, showing the particulars of, consumption on the principal railways during 1893	169	3
Statement showing the equivalent of 1 ton of Kurhurbaree coal in terms of other descriptions of, as used by some of the principal railways	168	3
Table showing the quantity of, consumed on the standard and metre gauge railways during 1892 and 1893	160	1
Gaekwar's Mehsána Railways—		
Flood damages	191	13
Revenue earnings and expenditure	123	32
Survey of proposed extension from Bahadarpur to State quarries near Songir, and of the proposed extension of the Patán branch	49	46
Works in progress	36	31
Gaekwar's Petlād Railway—		
Revenue earnings and expenditure	118	20
Works in progress	33	18
Gaekwar's railways—		
Extensions of	49	46
Gain or loss—		
<i>See</i> "Annual gain or loss."		
Garhara-Monghyr-Khagaria survey	48	38
Gas—		
Lighting of railway carriages with, on Pintsch's system	68	13
Gauge and classification of railways—		
Particulars of	202-206	App. C.
General merchandise—		
Quantity of, carried and the freight received during 1892 as compared with the previous year, and the principal variations in commodities	18	12
General results of working—		
Of railways of the different gauges for 1893	98	11
Statement No. 19, showing, of the principal standard and metre gauge railways during 1893	104-107	14
Ghāziabad-Moradabad-Chandausi Railway survey	41	4
Godhra-Rutlam Railway—		
Completion and opening of the Limkhérá-Dóhad section of	14	6
Revenue earnings and expenditure	113	8
Works in progress	33	17
Gograghāt-Kamálpur survey	44	22
Gogra River Bridge and approaches—		
Survey of	44	22
Gonda-Balrámpur-Ootrawlia-Tulsipur Railway—		
Completion of, survey	48	39
Goods rates—		
<i>See</i> Fares and rates."		
Goods traffic—		
Aggregate tonnage of goods moved, ton-mileage, and earnings from, during 1892 and 1893	18	12
Particulars regarding the—on all railways during 1893 as compared with the previous year	94	5
Quantity of general merchandise carried and the freight received therefrom on the standard and metre gauge railways during 1893 as compared with the previous year, and the principal variations in commodities	94	5
Statement No. 27, showing the tonnage and earnings from, on the standard and metre gauge railways during 1893	134-137	—

	Page.	Paragraph.
Goods traffic— <i>continued</i> .		
Statement No. 28, showing the unit mileages of goods on the standard and metre gauge railways during 1893	138-141	--
Statement showing the tonnage moved, the ton-mileage carried, and earnings from—during 1892 and 1893	102 & 103	—
Grain and seeds traffic—		
Total weight of, carried during 1892 and 1893	111	2
Graphic diagram—		
Showing open mileage, capital outlay, gross earnings, working expenses, and net earnings from the commencement of operations to the end of 1893	17	9
Great Indian Peninsula Railway system—		
Accidents	195	7
Fuel consumption	163	10
Goods rates	152	18
Introduction of an improved system of signalling on	15	6
Refusal to adopt revised rates for the carriage of coal and materials	150	1
Revenue earnings and expenditure	117	16
Works in progress	32	15
Gross earnings—		
Distribution of the, under main heads of account	17	10
During 1892 and 1893	17	10
Explanatory remarks on	94	3
Statement showing, of the principal railways per mean mile worked per week in five-yearly periods from the commencement up to 1893	97	10
Statement showing, of the principal railways per mean mile worked per week, and percentage of working expenses on gross earnings for 1892 and 1893	96	9
Statement showing the, and working expenses on all railways for 1892 and 1893	102 & 103	1
Statement showing, working expenses, and net earnings grouped in eight classes of railways for 1893; also results per train mile compared with 1892	95	8
Statement No. 29, showing, working expenses, &c. on the standard and metre gauge railways during 1893	142-145	—
Statistics of, on all lines during 1893	94	3
Guaranteed interest—		
Statement No. 20, showing the total amount advanced on account of, &c.	108	13
Statement No. 22, showing the capital expenditure, net revenue, &c., on guaranteed railways from 1870	109	13
Guaranteed railways—		
Results of working	98	13
Statement No. 1, showing results to the state of working, for 1892-93	21	—
Statement No. 7, showing the amount of capital raised by, to the 31st December 1893	77	2
Statement No. 9, showing the debenture loans on the 31st December 1893	79	3
Statement No. 11, showing the capital authorised to be raised, the amount raised, and the amount withdrawn by—to the 31st December 1893	88	—
Statement No. 12, showing the amount received from and withdrawn by, during 1893	89	—
Statement No. 13, showing annual withdrawals by, out of capital from the commencement to the 31st March 1893	90	—
Statement No. 20, showing the total amount advanced on account of guaranteed interest, &c.	108	13
Statement No. 21, showing the surplus profits earned by the, up to the end of 1880, and half-yearly thereafter to the 31st December 1893	108	13
Statement No. 22, showing the capital expenditure, net revenue, guaranteed interest, &c., on the, from 1870	109	13
Statement No. 23, showing the results of working the, and lines leased to or purchased from guaranteed companies, &c., for 1893	109 & 110	13
Guntakal-Mysore Frontier Railway—		
Transfer of the working of the Guntakal-Dharmavaram section of the, to the Southern Mahratta Railway Company	16	7
Hall Line steamers—		
Through booking to and from Europe of passengers and parcels during 1893	114	9
Hili-Bhowaniganj Railway project	48	37
Horse-boxes and cattle trucks—		
Cleaning of	68	16
Hyderabad-Umarkot Railway—		
Revenue earnings and expenditure	115	10
Indian Midland Railway system—		
Coaching fares	150	5
Fuel consumption	162	8
Goods rates	152	12
Revenue earnings and expenditure	113	7
Works completed and in progress	31	10

	Page.	Paragraph.
Jetalsar-Rajkot Railway—		
Flood damages	192	15
Revenue earnings and expenditure	124	35
Works completed and in progress	36	35
Jherriah extension—		
Works in progress	{ 15	6
	{ 26	1
Jodhpore-Bikaner Railway—		
Accidents	196	15
Fuel consumption	165	17
Goods rates	154	24
Revenue earnings and expenditure	123	33
Works in progress	36	33
Jungshahi-Tatta Railway survey	47	33
Kalka-Simla Railway survey—		
Particulars of	48	42
Kashmir Railway project—		
Particulars of	42	8
Khost Colliery	60	12
Kichha-Kashipur reconnaissance survey	48	41
Kolar Gold Fields Railway—		
Completion of	15	6
Works in progress	33	20
Kolhapur Railway, Southern Mahratta Railway System—		
Proposed extension of	50	49
Works in progress	37	36
Kotri-Kurrachee Section, North Western State Railway—		
Survey for doubling	42	10
Kotri-Rohri Railway Survey	42	11
Kurhurbaree and Serampore Collieries	53	1
Kurnool road, Kurnool Railway project	51	50
Lighting of railway carriages with gas on Pintsch's system	68	13
Lines under survey or projected—		
Ahmedabad-Dholera Railway	49	43
Ahmedabad-Prantij Railway	49	44
Aonla-Budáon Railway Survey	46	29
Bareilly Soron Railway Survey	45	23
Bengal and North-Western Railway (Company's section)	44	22
Bengal and North-Western Railway (Tirhoot section)	48	38
Bezwada-Madras Railway Survey	44	21
Bezwada-Masulipatam Railway	51	56
Burma (State) Railway, Meiktila-Myingyan Branch	51	57
Chittagong-Akyab-Minhla Railway survey	45	25
Connection with Bhagwangola	47	32
Connections with Ceylon	51	55
Coonor-Ootacamund Railway survey	51	53
Cuddalore-Pondicherry Railway survey	51	54
Cuttack-Midnapur-Calcutta Railway survey	40	1
Delhi-Minchinabad-Baháwalpur Railway survey	41	5
East Coast (State) Railway	44	20
East Indian Railway	46	27
Extensions of the Gaekwar's railways	49	46
Ferozepore-Ludhiána Railway survey	47	30
Ghaziabad-Moradabad-Chandausi Railway survey	41	4
Gonda-Balrámpur-Ootrawlia-Tulsipur Railway	48	39
Jungshahi-Tatta Railway survey	47	33
Kalka-Simla Railway survey	48	42
Kashmir Railway project	42	8
Kichha-Kashipur reconnaissance survey	48	41
Kolhapur Railway	50	49
Kotri-Rohri Railway survey	42	11
Kurnool road, Kurnool Railway project	51	50
Mandalay-Kunlon Railway survey	46	26
Mari-Attock Railway	42	9
Mogaung-Irrawaddy Railway survey	52	58
Morvi Railways	49	45
Nanjungúd-Gundalpet Railway	51	51
North Western (State) Railway	42	10
Pálghat-Kurapadna Railway survey	48	36
Perulam-Karikal Railway survey	51	54
Rae Bareli-Benares Railway survey	41	3
Raipur-Sonpur Railway survey	43	16

	Page.	Paragraph.
Lines under survey or projected— <i>cont.</i>		
Raipur-Vizagapatam Railway railway project	43	18
Rájkot-Jám Nagar Railway	50	48
Rajpipla Railway	50	47
Rámpur Rannagar Railway survey	46	28
Rohilkund and Kumaon Railway (Lucknow-Bareilly section)	48	40
Rutlam-Muttra Railway	43	14
Rutlam-Ujjain Railway	43	13
Sambalpur-Khurda Railway project	43	17
Saugor-Katni Railway reconnaissance survey	43	12
Schedule of railways lately surveyed, at present under survey, or recently put forward for consideration	52	59
Shoranur-Cochin and Calicut-Cannanore Railways	48	34
Shoranur-Trichur Railway survey	48	35
Singia-Madaripur-Chandpore Railway survey	40	2
Sini-Midnapur Railway survey	44	19
Sultanpur-Bogra and Hili Bhowaniganj Railway projects	48	37
Tápti Valley Railway	43	15
Umarkot-Pachpadra Railway survey	45	24
Umballa-Patíala Railway survey	47	31
Wazirabad-Mooltan Railway survey	42	6
West Coast Railways	43	15
Zhob Valley Railway, Dera Ismail Khan-Murtiza section	42	7
Locomotive and carriage superintendents in India—		
Committee of	68	14
Locomotives—		
Statement No. 6, showing the number and value of, and vehicles on the standard and metre gauge railways, and the rolling stock fitted with continuous and continuous automatic brakes	70-73	8
Statement No. 38, showing the average number of, in use on the principal railways, and the work obtained from each during 1893	182	1
Statement No. 39, showing the number of—and vehicles used in conveying traffic, and the number of miles travelled by trains during 1893	184-187	2
Loss or gain—		
See "Annual gain or loss."		
Lucknow-Bareilly section, Rohilkund and Kumaon Railway—		
Works completed and in progress	35	28
Lucknow-Cawnpore survey	44	22
Lucknow-Rae Bareilly section—		
See "Oudh and Rohilkhand (State) Railway."		
Madras Railway—		
Accidents	195	9
Flood damages	189	6
Fuel consumption	164	12
Revenue earnings and expenditure	118	18
Works completed and in progress	33	19
Main results of working and revenue statistics—		
Explanatory remarks on—		
Capital outlay	94	2
Coaching traffic	94	4
Goods traffic	94	5
Gross earnings	94	3
Mean mileage worked	94	2
Net earnings and statistical return on capital outlay	94	7
Statement No. 17, showing the net earnings on the principal railways and their percentage on the capital expenditure on open lines from 1889 to 1893	101	17
Statement No. 18, showing the main results of working of all railways for the years 1892 and 1893	102 & 103	1
Statement No. 19, showing the general results of working the principal standard and metre gauge railways during 1891	104-107	14
Statement No. 20, showing the total amount advanced on account of guaranteed interest to 31st December 1893, the net revenue to 20th June 1893 appropriated towards the repayment of that amount and the balance	108	13
Statement No. 21 showing the surplus profits earned by guaranteed railways up to the end of 1880 and half-yearly thereafter to the 31st December 1893	108	13
Statement No. 22, showing the capital expenditure, net revenue, guaranteed interest, &c., on the guaranteed railways from 1870	109	13
Statement No. 23, showing the result of working the guaranteed railways and lines leased to or purchased from guaranteed companies, &c., for 1893	109 & 110	13
Table showing capital expenditure and general results of working of all railways	98	11
Table showing the gross earnings of the principal railways per mean mile worked per week in five-yearly periods	97	10
Table showing the gross earnings per mean mile worked per week and the percentage of working expenses to gross earnings on the principal railways during 1892 and 1893	96	9

	Page.	Paragraph.
Main results of working and revenue statistics— <i>continued</i> .		
Table showing the results per train-mile during 1892 and 1893	95	8
Table showing financial results of working State lines by State agency, excluding non-commercial sections	100	15
Table showing the capital outlay and revenue transactions for the commercial and military sections of the North-Western (State) Railway for 1893	100	16
Makum Collieries	54	3
Mandalay-Kunlon Railway survey	46	26
Map—		
Showing, according to gauge, the railways constructed and sanctioned for commencement on the 31st March 1894	See before title page.	
Mári-Attock Railway—		
Construction of, postponed	42	9
Works in progress	30	9
Máyavaram-Mutupet Railway—		
Works completed and in progress	38	38
Mean mileage—		
See " Mileage.		
Meiktila-Myingyan branch, Burma (State) Railway—		
Completion of, survey	51	57
Mileage—		
Abstract of additions made to open, during each year from the commencement	208-215	App. D.
Additional, sanctioned during 1892-93	14	4
	201	App. B.
Additions, to open from the 1st April 1893 to the 31st of March 1894	13	2
	200	App. A.
Additions to open, subsequent to the close of the year 1893-94, and up to date (30th May)	14	3
Distribution of open—	13	2
Extensions of line sanctioned from the 1st April 1893 to the 31st March 1894	14	4
	201	App. B.
Graphic diagram showing the open, from the commencement of operations to the end of 1893	17	9
Mean, worked during 1892 and 1893	94	2
Statement No. 25, showing the, of open lines on the 31st December 1893, and the mean mileage worked during the year	126-128	—
Statement showing the total open, and the total mean, worked during 1892 and 1893	126-128	—
Statement showing progress made in the length of railways open year by year since their commencement	208-215	App. D.
Statement showing lengths of line sanctioned and open for traffic on the 31st March 1894	202-206	App. C.
Total length of railways open for traffic during 1892-93 and 1893-94, and additional lengths subsequently opened	13	2
	14	3
	200	App. A.
Total sanctioned—on the 31st of March 1893 and 1894	14	5
Mileage cost—		
Total average, of standard, metre and special gauge railways up to the 31st December 1893	16	8
Military—		
Adoption of covered goods and open sided waggons of the, type	68	15
Rolling stock adapted for, purposes	64	9
General results of working the, and commercial sections, North-Western (State) Railway, during 1893	100	16
Mogaung-Irrawaddy railway survey	52	58
Mohpani Colliery	55	6
Morvi Railway—		
Accidents	197	16
Conversion of the, to metre gauge	49	45
Refusal to adopt revised rates for the carriage of coal and railway materials	150	1
Mushkaf Bolán (State) Railway—		
Works in progress	29	8
Mu Valley (State) Railway—		
Charge of the Myohaung-Wuntho section of the, taken over by the Burma (State) Railway	16	7
Works in progress	38	41
Mysore section, Southern Mahratta Railway system—		
Works completed and in progress	36	36
Nanjangúd-Gundlapet Railway—		
Particulars regarding the	51	51
Net earnings—		
—and per-centage on capital outlay for each class of line	98	12
—and statistical return on capital outlay	94	7
Statement No. 17, showing the, and their percentage on capital outlay, for the principal railways, from 1889 to 1893	101	17

	Page.	Paragraph.
Net earnings— <i>continued</i> .		
Statement No. 22, showing capital expenditure,—&c. on guaranteed railways from 1870	109	13
Statement No. 29, showing gross earnings, working expenses, &c., on the standard and metre gauge railways during 1893	142-145	39
Statistical return of, on open line capital expenditure	19	16
Total, realised during 1892 and 1893	19	15
Nilgiri Railway—		
Works in progress	38	39
Nizam's Guaranteed State Railway system—		
Fuel consumption	164	13
Revenue earnings and expenditure	118	19
Works in progress	34	21
North-Western (State) Railway, gradient improvement works—		
Works completed and in progress	27	6
North-Western (State) Railway system—		
Accidents	194	4
Completion and opening of Ravi bridge	15	6
Doubling the Kotri-Kurrachee section	42	10
Ferry lines to serve Dera Ismail Khan and Dera Ghazi Khan	42	10
Flood damages	188	2
Fuel consumption	161	7
General results of working the military and commercial sections during 1893	100	16
Goods rates	152	13
Revenue earnings and expenditure	114	9
Through booking of passengers and parcels to and from Europe during 1893	114	9
Works completed and in progress	28	7
Numerical return of casualties whether by death, resignation and discharge or dismissal amongst the European and East Indian employés on the standard and metre gauge railways (open lines only) during 1893 (Statement No. 34)	174 & 175	—
Numerical return of servants of all races employed on the standard and metre gauge railways on the 31st December 1893 (Statement No. 33)	172 & 173	—
Oodeypore-Chitor Railway—		
Works in progress	36	32
Open mileage—		
See "Mileage."		
Oudh and Rohilkhand (State) Railway—		
Accidents	194	5
Coaching fares	151	7
Completion and opening of the Lucknow-Rae Bareli section of—	14	6
Fuel consumption	161	6
Goods rates	152	14
Revenue earnings and expenditure	115	11
Works completed and in progress	27	5
Pálanpur-Deesa Railway—		
Completion and opening of	15	6
Revenue earnings and expenditure	120	24
Works completed	36	30
Pálghat-Kurrapadna Railway	48	36
Passenger traffic—		
Statement No. 26, showing details of, on the standard and metre gauge railways during 1893	130-133	—
Statement No. 28, showing the unit mileages of passengers on the standard and metre gauge railways during 1892	138-141	—
Statement showing the number of passengers carried and the passenger unit mileages for 1892 and 1893	102 & 103	1
Total number of passengers carried and earnings from coaching traffic during 1892 and 1893	17	11
Peralam-Karikál Railway survey	51	54
Persons employed—		
Numbers of railway servants employed during 1892 and 1893	170	1
Percentage of casualties amongst Europeans and East Indian employés during 1892 and 1893	170	2
Statement No. 33, showing the number of servants of all races employed on the standard and metre gauge railways (open lines only) on the 31st December 1893	172 & 173	—
Statement No. 34, showing casualties by death, resignation, and discharge or dismissal amongst the European and East Indian employés on the standard and metre gauge railways (open lines only) during 1893	174 & 175	—
Statement No. 35, showing particulars regarding the State Railway Provident institutions on the 31st December 1893	176	3
Statement No. 36, showing the enrolled strength and number of efficient in the several railway volunteer corps on the 31st March 1894	177 & 178	4
Statement No. 37, showing the strength and cost of police on the standard and metre gauge railways (open lines) and the amount of compensation payments due to thefts for the year 1893	180 & 181	—

	Page.	Paragraph.
Petroleum—		
— in Assam	54	4
Baluchistan, operations	62	15
Pintsch's system—		
Lighting of railway carriages with gas on	68	13
Police—		
Statement No. 37, showing the strength and cost of, on the standard and metre gauge railways (open lines), and the amount of compensation payments due to thefts for the year 1893	180-181	—
Poona branch, Southern Mahratta Railway system—		
Works completed and in progress	36	36
Powayan Steam Tramway—		
Extension of, authorised	14	4
Principal commodities—		
See "Commodities."		
Principal events—		
Amalgamation of the gradient improvement works on the North-Western (State) Railway between Jhelum and Ráwalpindi with the Mári-Attock Railway, as a separate charge	15	7
Conference of railway delegates	16	7
Construction of a fair weather connection between the Bengal and North-Western and the Oudh and Rohilkland (State) Railways	15	7
Establishment of a connection between the Southern Mahratta and the East Coast (State) Railways by the opening of a metre gauge track across the Kistna bridge	16	7
Introduction of automatic vacuum brakes on the mail trains of the East Indian Railway and also of Pintsch's system of lighting carriages with gas on certain railways	15	7
Opening through of the Yesvantpur-Mysore Frontier Railway	16	7
Transfer of—		
Guntakal-Dharmavaram and the Dharmavaram-Mysore Frontier sections of the Guntakal-Mysore Frontier Railway to the Southern Mahratta Railway Company	16	7
Maintenance, with all capital works in progress of the Myohaung-Wuntho section of the Mu Valley (State) Railway to the Burma (State) Railway	16	7
Waggon ferry of the Bengal and North-Western Railway from Digha to Mokameh Gha	15	7
Projects—		
See "Lines under survey or projected."		
Provident Institutions—		
Statement No. 35 showing particulars regarding the State Railway, on the 31st December 1893	176	3
Public traffic—		
Analysis of	111	1
Quetta coal-fields	61	14
Rae Bareli-Benares Railway survey of	41	3
Railway materials—		
Revised rates for the carriage of coal and	150	1
Railway servants—		
Numbers of, employed during 1892 and 1893	170	1
Statement No. 33, showing the number of, of all races employed on the standard and metre gauge railways (open lines only) on the 31st December 1893	172-173	—
Raipur-Sonpur Railway survey	43	16
Raipur-Vizagapatam Railway project	43	18
Rajahmundry-Vizianagram section, East Coast (State) Railway—		
Completion and opening of—	14	6
Rájkot-Jám Nagar Railway—		
Particulars regarding	50	48
Rajpipla Railway—		
Proposed construction of	50	47
Rájpura-Bhátinda Railway—		
Revenue earnings and expenditure	119	21
Rajputana-Malwa Railway—		
Accidents	195	10
Flood damages	190	8
Fuel consumption	165	16
Revenue earnings and expenditure	119	23
Works completed and in progress	35	29
Rámpur-Ramnagar Railway survey	46	28
Rates and fares—		
See "Fares and rates."		
Results—		
Table showing—per train-mile for 1892 and 1893	95	8

	Page.	Paragraph.
Results, Financial— <i>See</i> "Financial results."		
Results of Working—		
Comparison of financial, of State railways by State agency during 1892 and 1893	99	15
Statement No. 18, showing the main, of all railways for the years 1892 and 1893	102 & 103	1
Statement No. 19, showing the general, of the principal standard and metre gauge railways during 1893	104-107	14
Statement No. 23, showing the, guaranteed railways and lines leased to or purchased from guaranteed companies, &c., for 1893	109 & 110	13
Table showing the general, of the standard, metre, and special gauge lines during 1893	98	11
Retiring accommodation for females— <i>See</i> "Females."		
Revenue earnings and expenditure— Details of, on—		
Bengal and North-Western Railway system	119	22
Bengal Central Railway	116	13
Bengal Dooars Railway	122	30
Bengal-Nágpur Railway	112	6
Bhánagar-Gondal-Junágarh-Porbandar Railway	123	34
Bombay, Baroda, and Central India Railway	117	17
Burma (State) Railway system	121	27
Calcutta Port Commissioners' Railway	116	14
Deoghur Railway	121	28
Dibru-Sadiya Railway	122	31
East Coast (State) Railway, Godávári-Vizianagram section	117	15
Eastern Bengal (State) Railway	115	12
East Indian Railway system	112	5
Gaekwar's Mehsána Railway	123	32
Gaekwar's Petlád Railway	118	20
Godhra-Rutlam Railway	113	8
Great Indian Peninsula Railway system	117	16
Hyderabad-Umarkot Railway	115	10
Indian Midland Railway system	113	7
Jetalsar-Rájkot Railway	124	35
Jodhpore-Bickaneer Railway	123	33
Madras Railway	118	18
Nizam's Guaranteed (State) Railway system	118	19
North-Western (State) Railway, including the Jammu and Kashmir Railway (Native State section)	114	9
Oudh and Rohilkhand (State) Railway	115	11
Pálanpur-Deesa Railway	120	24
Rájpura-Bhátinda Railway	119	21
Rajputana-Malwa Railway	119	23
Rohilkund and Kumaon Railway system	122	29
Southern Mahratta Railway system	120	25
South Indian Railway, including the Pondicherry Railway	121	26
West of India Portuguese Railway	124	36
Explanatory Remarks on—		
Grain and seeds traffic	111	2
Public traffic	111	1
Wheat traffic	111	3
Statement comparing the North-Western (State) Railway earnings from passenger and parcels traffic in connection with the through booking arrangements to and from Europe during 1892 and 1893	114	9
Statement No. 24, showing the summary of the principal commodities carried and the earnings therefrom on the standard and metre gauge railways during 1892 and 1893	125	1
Statement No. 25, showing the mileage of railways open for traffic on the 31st December 1893, and the mean mileage worked during the year	126-128	—
Statement No. 26, showing the passenger traffic on the standard and metre gauge railways during 1893	130-133	—
Statement No. 27, showing the goods traffic on the standard and metre gauge railways during 1893	134-137	—
Statement No. 28, showing the unit mileages of passengers and goods carried on the standard and metre gauge railways during 1893	138-141	—
Statement No. 29, showing the gross earnings per train-mile and per mile per week, and the working expenses and net earnings per train-mile on the standard and metre gauge railways during 1893	142-145	—
Statement No. 30, showing the working expenses in detail on the standard and metre gauge railways during 1893	146-149	—
Table showing the exports of wheat from the three chief ports during the last seven years, the estimated outturn of wheat in India during each previous financial year in tons, and the percentage of exports on out-turn	111	3
Table showing the quantities of wheat carried by the important exporting railways during the past seven years	111	3

	Page.	Paragraph.
Rohilkund and Kumaon Railway system—		
Construction of Sitapur grain-siding abandoned	48	40
Revenue earnings and expenditure	122	29
Statement No. 15, showing withdrawals out of capital for expenditure during each financial year from the commencement to the 31st March 1894	91	—
Works completed and in progress on the Lucknow-Bareilly section	35	28
Rolling Stock—		
Adapted for military purposes	64	9
Adoption of covered goods and open-sided waggons of the military type	68	15
Cleaning of horse-boxes and cattle trucks	68	16
Committee of locomotive and carriage superintendents in India	68	14
Lighting of railway carriages with gas on Pintsch's system	68	13
Particulars of automatic vacuum brakes fitted to, of certain railways	66	10
Particulars of couplings fitted to, of certain railways	67	11
Statement No. 6, showing the number and value of locomotives and vehicles on the standard and metre gauge railways, and, fitted with continuous and continuous automatic brakes	70-73	8
Statement No. 6A, showing the number of carriages fitted with retiring accommodation for females	74	12
Statement No. 38, showing the average number of locomotives in use on the principal railways and the work obtained from each during the year 1893	182	1
Statement No. 39, showing the number of engines and vehicles used in conveying traffic and the number of miles travelled by trains on the standard and metre gauge railways during the year 1893	184-187	2
Statement showing the number of carriages fitted with hooks or racks for soldiers' rifles	69	9
Rutlam-Mutra Railway survey	43	14
Rutlam-Ujjain Railway	43	13
Sambalpur-Khurda Railway project	43	17
Saugor-Katni Railway reconnaissance survey	43	12
Schedule of railways lately surveyed, at present under survey, or recently put forward for consideration	52	59
Seeds and grain traffic—		
Total weight of, carried during 1892 and 1893	111	2
Scrapore and Kurhurbaree Collieries	53	1
Sharigh colliery	61	13
Shoranur-Cochin Railway	48	34
Shoranur-Trichur Railway survey	48	35
Sind-Pishin section—		
Works completed and in progress	28	7
Sind-Sagar section—		
Works in progress	28	7
Singareni Colliery	57	9
Singia-Madareepore Chandpur Railway survey	40	2
Sini-Midnapur Railway survey	44	19
Sinking funds—		
Contribution to, during 1892-93 and 1893-94 for redemption of capital	20	17
Scutlery Mahratta Railway system—		
Accidents	196	11
Flood damages	190	9
Fuel consumption	165	19
Goods rates	153	20
Mysore West Coast reconnaissances	51	52
Nanjangúd-Gundlapet Railway	51	51
Revenue earnings and expenditure	120	25
Works completed and in progress	36	36
South Indian Railway system—		
Accidents	196	12
Flood damages	190	10
Fuel consumption	166	20
Goods rates	153	22
Revenue earnings and expenditure	121	26
Works completed and in progress	37	37
State lines leased to companies—		
Statement No. 8, showing the total amount of capital raised for, up to the 31st December 1893	78	2
Statement No. 9, showing debenture loans on the 31st December 1893	79	3
Statement No. 11, showing the capital authorised, raised, and withdrawn by, to the 31st December 1893	88	—
Statement No. 12, showing the amount received from and withdrawn by, during 1893	89	—
Statement No. 14, showing the annual withdrawals out of capital on account of, from the commencement to the 31st March 1894	91	—
Statement showing results to the State of working, for 1892-93	21	—

	Page.	Paragraph.
State Railways—		
Financial results of working the, by State agency, excluding non-commercial sections for 1892 and 1893	99	15
Results to the State of working, for 1892-93	22 & 23	—
Statement showing capital transactions of, to 31st December 1893, <i>see</i> "Capital."		
Statistics—		
Statement No. 19, showing the, of working of the principal standard and metre gauge railways during 1893	104-107	14
Statement showing the revenue—grouped in eight classes of railways for 1892 and 1893	95	8
Table showing the general results of working and revenue—of the standard, metre, and special gauge lines during 1893	102 & 103	1
Stores—		
Cost of the establishments at ports	63	3
Credits to Civil Department on account of one per cent. insurance	64	5
Expenditure in England	63	1
Expenditure in India	63	2
Ships employed	63	4
Statement showing capital locked up in stores on the standard and metre gauge railways on the 31st December 1893 as compared with the 31st December 1892	64	7
Value of imported stores held in reserve at Calcutta	64	6
Stores and rolling stock—		
<i>See</i> "Stores."		
<i>See</i> "Rolling-stock."		
Subsidised railway—		
Statements showing the capital transactions of, to the 31st December 1893.		
<i>See</i> "Capital."		
Sultanpur-Bogra and Hili Bhowaniganj Railway projects	48	37
Surplus profits—		
Statement No. 21, showing the, earned by guaranteed railways up to the end of 1880 and half-yearly thereafter to the 31st December 1893	108	13
Surveys—		
<i>See</i> "Lines under survey or projected."		
Tabular Statements—		
List of, contained in the Administration Report	11 & 12	—
Tápti Valley Railway—		
Particulars regarding	43	15
Telanpali—		
Coal-field at, near the Eeb river	57	8
Tirhoot section, Bengal and North-Western Railway system—		
Works completed and in progress	35	25
Tonnage of goods—		
Aggregate, moved and the earnings from goods traffic during 1892 and 1893	18	12
Statement No. 27, showing the, and the earnings from goods traffic on the standard and metre gauge railways during 1893	134-137	—
Toposi extensions—		
Works in progress	26	1
Traffic results—		
Coaching traffic	94	4
Goods traffic	94	5
Train-mile(s)—		
Statement No. 39, showing, run on the standard and metre gauge railways during 1893	184-187	—
Statement showing the total, run on all railways during 1892 and 1893	102-103	1
Table showing the results per, during 1892 and 1893	95	8
Tramways—		
Additional length of steam, sanctioned during 1893-94	14	4
Total length of steam—working outside municipal limits	13	2
Troop traffic works	28	7
Umamia colliery	56	7
Umarkot-Pachpadra Railway survey	45	24
Umballa-Patidla Railway survey	47	31
Unit mileages—		
Statement No. 28, showing the, of passengers and goods conveyed on the standard and metre gauge railways during 1893	138-141	—
Vacuum brakes—		
Fitting of automatic, to the rolling stock of standard and metre gauge railways	66	10
Introduction of automatic, on the mail trains of the East Indian Railway	15	7
Volunteer corps—		
Statement No. 36, showing particulars regarding, on the several railways on the 31st March 1894	177 & 178	4

	Page.	Paragraph.
Waggons—	68	15
Adoption of covered goods and open-sided, of the military type	54	5
Warora Colliery	42	6
Wazirabad-Mooltan Railway survey		
West Coast Railways—	51	52
Particulars regarding the construction of		
West of India Portuguese Railway—	124	36
Revenue earnings and expenditure		
Wheat—		
Quantities of, carried by the principal exporting railways during the last seven years, and the exports from Calcutta, Bombay, and Kurrachee ports during the same period, also the estimated out-turn of, during each previous financial year	111	3
	111	3
Total, traffic carried over the entire system of standard and metre gauge railways	94	6
Working expenses—		
Explanatory remarks on		
Statement No. 29, showing the gross earnings, &c. on the standard and metre gauge railways during 1893	142-145	—
Statement No. 30, showing the, in detail on the standard and metre gauge railways during 1893	146-149	—
Statement showing the gross earnings of the principal railways per mean mile worked per week and the percentage of, on gross earnings for 1892 and 1893	96	9
Statement showing the gross earnings and, on all railways for 1892 and 1893	102 & 103	1
Total, during 1892 and 1893 and the percentage on gross earnings under the several departmental heads for 1893	19	14
Works completed and in progress—		
Particulars regarding, on—	34	23
Assam-Bengal Railway	35	25
Bengal and North-Western Railway, Tirhoot section	27	3
Bengal Central Railway	35	27
Bengal Dooars Railway	32	14
Bengal-Nágpur Railway	36	34
Bhánagar-Gondal-Junágarh-Porbandar Railway	31	11
Bhopal-Itársi Railway	31	12
Bhopal-Ujjain Railway	32	13
Bína-Guna Railway	32	16
Bombay, Baroda, and Central India Railway	38	40
Burma State Railway system	27	4
Calcutta Port Commissioners' Railway	35	26
Cooch Behar Railway	35	24
Dibru-Sadiya Railway	34	22
East Coast (State) Railway	26	2
Eastern Bengal (State) Railway	26	1
East Indian Railway	36	31
Gaekwar's Mehsána Railway	33	18
Gaekwar's Petlád Railway	33	17
Godhra-Rutlam Railway	32	15
Great Indian Peninsula Railway system	31	10
Indian Midland Railway	36	35
Jetalsar-Rájkot Railway	36	33
Jodhpore-Bickaneer Railway	33	20
Kola Goldfields Railway	33	19
Madras Railway	30	9
Mári-Attock Railway	38	38
Máyavaram-Mutupet Railway	29	8
Mushkaf-Bolán (State) Railway	38	41
Mu Valley (State) Railway	38	39
Nilgiri Railway	34	21
Nizam's Guaranteed (State) Railway	27	6
North-Western (State) Railway, gradient improvement works	28	7
North-Western (State) Railway system	36	32
Oodeypore-Chitor Railway	27	5
Oudh and Rohilkhand (State) Railway	36	30
Pálanpur-Deesa Railway	35	29
Rajputana-Malwa Railway	35	28
Rohilkund and Kumaon Railway, Lucknow-Bareilly section	36	36
Southern Mahratta Railway system	37	37
South Indian Railway		
Zhob Valley Railway, Dera Ismail Khan-Murtiza section, construction of, postponed	42	7

REPORT
ON
SANITARY MEASURES IN INDIA
IN
1892-93.

VOL. XXVI.

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CONTENTS.

REPORT.

	Page		Page
I. EUROPEAN ARMY :		V. VACCINATION—continued :	
Sickness and mortality in 1892	- 1	Bombay	- 25
Cholera	- 2	Berar	- 25
Small-pox	- 2		
Fevers	- 2	VI. MEDICAL INSTITUTIONS :	
Bowel complaints	- 3	Civil Hospitals and Dispensaries :	
Venereal diseases	- 3	Bengal	- 27
Invaliding	- 3	Punjab	- 28
		North-Western Provinces and Oudh	- 29
II. NATIVE ARMY :		Burma	- 29
Sickness and mortality in 1892	- 4	Central Provinces	- 29
Bengal Native Army	- 4	Assam	- 29
Corps of Central India and Rajputana	- 5	Madras	- 30
Hyderabad Contingent	- 5	Bombay	- 30
Madras Native Army	- 5	Berar	- 31
Bombay Native Army	- 5		
		Lunatic Asylums :	
III. GENERAL POPULATION :		Bengal	- 31
Vital Statistics-	- 6	North-Western Provinces	- 31
Bengal	- 6	Punjab	- 32
North-Western Provinces and Oudh	- 8	Burma	- 32
Punjab	- 9	Central Provinces	- 32
Burma	- 11	Assam	- 32
Central Provinces	- 11	Madras	- 33
Assam	- 12	Bombay	- 33
Madras	- 13		
Bombay	- 15	Medical Schools :	
Berar	- 15	Bengal	- 33
		North-Western Provinces and Oudh	- 34
IV. JAILS :		Punjab	- 34
Sickness and mortality in 1892	- 17	Madras	- 34
Bengal	- 17	Bombay	- 35
North-Western Provinces and Oudh	- 18		
Punjab	- 18	VII. SANITATION :	
Burma	- 19	Civil :	
Assam	- 19	Bengal	- 36
Central Provinces	- 20	North-Western Provinces and Oudh	- 36
Madras	- 20	Punjab	- 37
Bombay	- 20	Burma	- 37
Berar	- 21	Central Provinces	- 38
		Assam	- 38
V. VACCINATION :		Madras	- 38
General results	- 22	Bombay	- 39
Bengal	- 22	Berar	- 40
North-Western Provinces and Oudh	- 23		
Punjab	- 23		
Burma	- 24		
Central Provinces	- 24		
Assam	- 24		
Madras	- 25		

ABSTRACTS.

	Page
India Sanitary Report for 1892 :	
European troops - - - - -	43
Native troops - - - - -	61
Jails - - - - -	71
General population - - - - -	76
History of chief diseases - - - - -	82
Vaccination - - - - -	96
Sanitary works - - - - -	99
General remarks - - - - -	102
Madras Sanitary Report for 1892 :	
General population - - - - -	105
Chief diseases - - - - -	108
Sanitary works - - - - -	112
General remarks and Personal proceedings - - - - -	114
Bombay Sanitary Report for 1892 :	
General population - - - - -	116
Chief diseases - - - - -	118
Sanitary works - - - - -	120
General remarks - - - - -	120
Shipping and Health of the Port of Bombay - - - - -	121
Calcutta Municipal Report for 1892-93 - - - - -	126
Calcutta Health Report for 1892 - - - - -	133
Madras Municipal Report for 1892-93 - - - - -	142
Bombay Municipal Ditto - - - - -	148
Bombay Health Report for 1892 - - - - -	151

APPENDIX.

Memoranda by the Army Sanitary Commission on:—

India Sanitary Report for 1892 - - - - -	157
Bengal Sanitary Report for 1892 - - - - -	163
North-Western Provinces and Oudh Sanitary Report for 1892 - - - - -	167
Punjab Sanitary Report for 1892 - - - - -	171
Burma Sanitary Report for 1892 - - - - -	176
Central Provinces Sanitary Report for 1892 - - - - -	179
Assam Sanitary Report for 1892 - - - - -	183
Rajputana Dispensary, Vaccination, Jail, and Sanitary Report for 1892 - - - - -	186
Coorg Sanitary Report for 1892 - - - - -	188
Madras Sanitary Report for 1892 - - - - -	189
Bombay Sanitary Report for 1892 - - - - -	192
Hyderabad Assigned Districts Sanitary Report for 1892 - - - - -	195
Calcutta Municipal Report for 1892-93 - - - - -	199
Madras Municipal Report for 1892-93 - - - - -	202
Bombay Municipal Report for 1892-93 - - - - -	205

A. GODLEY,

Under Secretary of State for India.

INDIA OFFICE,

24th October 1894.

REPORT.

I.—EUROPEAN ARMY.

The present Report on Sanitary Measures in India during the year 1892 is prepared for presentation to Parliament. It contains chapters on the health of the European and Native Troops, on the health of prisoners in jails, and on the health of the general population; it also contains chapters on vaccination, on medical institutions, including medical schools and lunatic asylums, and a chapter on sanitary works. Appended to the Report are abstracts of reports by the three principal Sanitary Commissioners in India, and memoranda by the Army Sanitary Commission in England reviewing the several Sanitary Reports for India.

There was more sickness among the European troops on service in India during 1892 than in the previous year, the mortality was also greater. Of an average strength of 68,137, the admissions into hospital were in the ratio of 1,517 per 1,000 against 1,379 in 1891, the daily sick-rate was 84 or 5 per 1,000 more, and the death-rate rose from 15·89 to 17·07. The loss by invaliding was 24 per 1,000, or 3 per 1,000 less than in 1891, bringing the total loss by death and invaliding up to 41 per 1,000, a decrease of 2 per 1,000 on the previous year.

Sickness and mortality in 1892.

The following statement shows the relative extent of sickness and mortality among European troops in the three Presidencies during 1892 and the previous year :—

Presidency.	Average Strength.	Ratio per 1,000 of Average Strength.					
		Admissions.	Daily Sick.	Deaths.	Invaliding.	Total Loss.	
Bengal - - -	1892	42,198	1,582	87	19·81	23	42
	1891	40,994	1,394	80	16·86	25	42
Madras - - -	1892	13,227	1,236	83	12·32	33	45
	1891	13,324	1,304	82	14·49	31	46
Bombay - - -	1892	12,712	1,593	74	12·90	21	34
	1891	12,713	1,409	73	14·24	29	43
INDIA - - -	1892	68,137	1,517	84	17·07	24	41
	1891	67,030	1,379	79	15·89	27	43

It will be seen from the above statement that of the three armies Bengal continued to be the most unhealthy. The chief causes of sickness in the whole European Army were, as in the previous year, ague and venereal diseases, the former yielding a ratio of 429 per 1,000 against 343 in 1891, and the latter 410 per 1,000 against 401. More than half (55 per cent.) of the total sickness resulted from these two causes. Influenza was present among the troops to a much greater extent than in 1891, and caused an admission rate of 12·7 per 1,000 against 5·5. Enteric fever, as usual, was the chief cause of mortality, and the death-rate from it was 5·52 per 1,000 against 5·73 in 1891. Cholera was much less prevalent, there being 167 admissions in 1892 against 252 in 1891, and 121 deaths, equal to 1·78 per 1,000, against 168 or 2·51. Enteric fever caused 32 per cent. and cholera 10 per cent. of the total deaths.

In the Bengal Army the admission rate rose from 1,394 per 1,000 in 1891 to 1,582, the daily sick-rate from 80 to 87 per 1,000, and the death-rate from 16·86 to 19·81. Ague and venereal diseases were the chief causes of admission to hospital, contributing 30 and 26 per cent. respectively of the total sickness. The chief cause of mortality was enteric fever, with a ratio of 6·40 per 1,000 against 6·64 in 1891. Under this one head alone 32 per cent. of the total deaths occurred. Cholera mortality among the Bengal troops declined from 114 or 2·78 per 1,000 to 102 or 2·42.

Bengal Army.

Though there was a slight increase in the number of constantly sick in the European army of Madras in 1892 as compared with the previous year, both the admission and

Madras Army.

death rates showed a decrease, the latter declining from 14·49 per 1,000 to 12·32. As in Bengal and Bombay venereal diseases and ague caused the majority of the admissions, the former yielding 34 per cent. of the total admissions and the latter 13 per cent. Among the death causes enteric fever was the chief, contributing 26 per cent. of the total deaths against 21 per cent. in 1891, dysentery followed with 10 per cent.

Bombay
Army.

In the Bombay Army there was increased sickness owing to influenza and malaria, but a much lower mortality than in 1891, the death-rate being 12·90 per 1,000 against 14·24. Chief among the diseases causing admissions were ague and venereal diseases, together yielding 58 per cent. of the total. Of the deaths 39 per cent. resulted from enteric fever, and 7 per cent. from cholera.

Groups of
stations.

The following table shows the sickness and mortality among the European troops in the new groups :—

Groups.	Average Strength.	Ratio per 1,000 of Average Strength.		
		Admission Rate.	Constantly Sick Rate.	Death Rate.
Burma Coast and Bay Islands -	1,620	1,349	92·6	7·41
Burma, Inland -	2,453	1,589	91·7	18·75
Bengal and Orissa -	2,274	1,602	97·6	11·43
Gangetic Plain and Chutia-Nagpur -	7,337	1,617	104·7	17·04
Upper Sub-Himalayan -	13,632	1,704	88·5	22·01
Indus Valley and North-Western Raj- putana -	5,155	2,009	89·0	31·81
South-Eastern Rajputana, Central India, and Gujarat -	6,045	1,816	91·0	14·72
Deccan -	9,621	1,220	72·3	11·64
Western Coast -	1,383	1,599	85·3	11·57
Southern India -	3,491	1,161	86·8	10·31
Hill Stations -	9,190	1,147	66·8	12·84
Hill Convalescent Depôts -	2,644	1,199	84·0	22·69

Of the above 12 groups, all but two returned a higher constantly-sick rate than the ratio for the whole European Army, the highest being 104·7 per 1,000 of average strength in the Gangetic Plain and Chutia-Nagpur group. Bengal and Orissa followed with 97·6, and Burma Coast and Bay Islands with 92·6. The lowest ratio (66·8) was returned by the Hill Stations group. The death-rate of the entire Army was exceeded by four groups, the Indus Valley returning the highest (31·81), followed by Hill Convalescent Depôts (22·69); that of Burma Coast (7·41) was the lowest.

Of the stations with a strength of over 1,000, six returned a higher death-rate than that of their Presidencies, viz., Peshawar 56·74, Meean Meer 38·24, Bareilly 28·39, Karachi 18·96, Poona 13·71, and South Secunderabad 13·32.

Cholera.

Notwithstanding the exceptionally high mortality from cholera among the civil population during 1892 the disease was less prevalent among the European troops than in 1891. The admissions to hospital from cholera numbered 167, or 2·5 per 1,000 of average strength, against 252 or 3·8 per 1,000, and the deaths 121 or 1·78 per 1,000, against 168 or 2·51 in 1891. Among the troops in the Bengal Army there were 143 cases of the disease with 102 deaths, the latter being in the ratio of 2·42 per 1,000 of strength, against 114 deaths or 2·78 in 1891. The Madras Army recorded only 8 cases of cholera, of which 7 proved fatal, the deaths being in the ratio of 0·53 per 1,000. In the Bombay Army the cases of cholera declined from 53 to 16, and the deaths from 33, or 2·60 per 1,000, to 12 or 0·94.

Small-pox.

Among the whole of the European troops in India there were during the year under notice 18 cases of small-pox, of which three were fatal, one in Madras, and two in Bombay. In the previous year there were only 14 cases and one death.

Fevers.

From intermittent fever the admissions to hospital among the European troops in 1892 were in the ratio of 429 per 1,000 of strength against 343 in the previous year. The deaths under this head numbered 19, an increase of seven on the mortality of 1891. Of these, 10 occurred among the Bengal troops, and eight among the Madras troops.

From enteric fever the admissions rose from 1,366, or 20·4 per 1,000 of strength, to 1,509 or 22·1, and the deaths fell from 384, or 5·74 per 1,000, to 376 or 5·52. Of the three armies, Madras was the only case in which the mortality under this head was higher than in 1891, the other two armies showing a slight decrease. The Bengal Army recorded an enteric fever death-rate of 6·40 per 1,000 against 6·64 in 1891, the Madras Army 3·18 against 3·08, and the Bombay Army 5·03 against 5·58. As usual, young and unacclimatised soldiers were the chief sufferers, those under 25 years of age yielding a death-rate of 8·44 per 1,000 against 9·11 in 1891, while among men between 25 and 29, and from 30 to 34, the mortality was 2·92 and 1·65 per 1,000 respectively. Among men of less than two years' residence in India, the death-rate from this cause fell from 11·60 to 10·69 per 1,000, among men of three to five years from 3·64 to 3·56, and among troops of from six to ten years from 2·23 to 2·15. Enteric fever again formed the subject of investigation on the part of medical officers, but no satisfactory results were obtained as to the origin of outbreaks. "As in former years," Dr. Rice, Sanitary Commissioner with the Government of India, observes, "medical officers were "unable, even to their own satisfaction, to trace out in any given outbreak a definite "insanitary condition to which the outbreak might, with certainty, be attributed." Some interesting remarks regarding the opinions of bacteriologists on the diagnosis of this disease will be found in the abstract of Dr. Rice's report, pp. 52 and 53.

The admissions from dysentery and diarrhoea among the European troops were in the ratio of 59 per 1,000 of strength or one per 1,000 less than in 1891, and the death-rate 0·72 against 0·52. As in the previous year, there were no deaths from diarrhoea in the Madras Army, but dysentery was more prevalent than in either the Bengal or Bombay Armies. Bowel complaints.

Venereal diseases came next to ague in the list of causes of admission to hospital, and first in the causes of invaliding. They were the cause of 27 per cent. of the total admissions during 1892, and 13 per cent. of the invaliding of the European Army of India. The ratio of admissions from venereal diseases per 1,000 of strength was 410, or nine above that of 1891. The increase was confined to Bengal and Madras. In Bengal the admission-rate rose from 395 to 412 per 1,000, in Madras from 402 to 415, while in Bombay the ratio fell from 417 to 396. As regards the voluntary venereal arrangements, in connexion with the new cantonment hospitals, medical officers, Dr. Rice says, now take a much less sanguine view of the good to be effected by them, "because they find that the women, having quite come to realise that no one can force "them to come and be cured, have nearly given up attending." Venereal diseases.

The loss to the whole army by invaliding during 1892 amounted to 1,661 men, equal to 24·37 per 1,000, against 1,793 or 26·78 in 1891. The proportion of invalids to strength was least in Bombay (21·33 per 1,000) and highest in Madras (33·05), that of Bengal being 22·57. Of the total number invalided, 40 per cent. were discharged as unfit for further service, being 6 per cent. more than in 1891. As regards the influence of age and length of residence in India upon invaliding, 53·41 per cent. of the total number invalided were under 25 years of age, against 54·01 in 1890, while 35 per cent. were of less than two years' service, and 77 per cent. were of less than five years' service. In the European Army as a whole, 79 per cent. of the total strength had seen less than five years' service. Invaliding.

II.—NATIVE ARMY.

Sickness and mortality in 1892.

The health of the Native Army of India during 1892 was, on the whole, less satisfactory than in the previous year. There was more sickness owing to the prevalence of influenza and malaria, but the mortality was reduced.

The ratios of sickness and mortality of each section of the Native Army of India for 1892 and the previous year are given in the following table :—

			Average Strength.	Ratio per 1,000 of Average Strength.			
				Admissions.	Daily Sick.	Deaths.	Total Deaths, including Absentees.
Bengal Native Army	-	- { 1892	65,594*	1,234	40	16·53	19·70
		- { 1891	66,230	1,021	35	17·32	18·10
Madras ditto	-	- { 1892	25,963	868	38	18·53	26·00
		- { 1891	26,088	1,017	46	20·05	27·28
Bombay ditto	-	- { 1892	23,355*	1,130	34	10·10	12·48
		- { 1891	23,780	978	31	9·63	12·34
Corps of Central India and Rajputana	-	- { 1892	5,128	777	21	9·56	10·50
		- { 1891	5,175	629	20	7·73	8·96
Hyderabad Contingent	-	- { 1892	7,058	681	22	7·08	8·35
		- { 1891	7,063	529	19	6·09	7·83
INDIA	-	- { 1892	127,355	1,092	37	14·97	18·67
		- { 1891	128,600	972	35	15·44	19·34

* Excluding the statistics of the mixed troops at Panigur and on the march.

As usual the Hyderabad Contingent and the Central India Irregular Force were the healthiest branches of the Native Army. The Bengal Army returned the highest sickness, and Madras the highest mortality.

The chief cause of sickness in the Native Army was ague, which yielded 48 per cent. of the total admissions. Among the diseases from which the admissions to hospital were higher than in 1891 were influenza, small-pox, "other fevers," respiratory diseases and ague, while from cholera, diarrhoea, and guinea-worm, there was a decrease in the admissions. Pneumonia and cholera were the chief causes of death in the Native Army, the ratios being 3·26 and 2·14 per 1,000 respectively of average strength, against 2·53 and 2·64 in 1891. Under these two heads, 36 per cent. of the total deaths were registered. Fevers of all kinds were the cause of 17 per cent. of the total deaths, against 41 per cent. among the European troops. From ague, remittent and simple continued fevers, the deaths among the Native troops were in the ratio of 2·45 per 1,000, while among the European troops the proportion was 1·42. On the other hand the death-rate from enteric fever among the Native troops was only 0·13 per 1,000 as compared with 5·52 among the European troops. Native troops seem to be more liable to dysentery than European troops, for while among the former this disease caused 6·4 per cent. of the total deaths, among the latter it was the cause of only 3·7 per cent. of the deaths. But of all diseases, those of the respiratory organs are the chief causes of death in the Native Army. From pneumonia the mortality of Native soldiers (3·26 per 1,000) was more than five times as great as that of European troops (0·62 per 1,000).

Bengal Native Army.

The health of the Native Army of Bengal in 1892 was not so good as in 1891. There was considerably more sickness, but the death-rate fell from 17·32 per 1,000 to 16·53. Ague prevailed to a much greater extent, and caused 51 per cent. of the total admissions. Pneumonia and cholera were the chief causes of death, the former yielding over 25 per cent. of the total deaths, and the latter 16 per cent.; the cholera death-rate was 2·58 against 3·73 in 1891.

The following statement gives the principal statistics of the Native Army, arranged in geographical groups for 1892 :—

	Average Strength.	Ratio per 1,000 of Average Strength.		
		Admissions.	Daily Sick.	Deaths.
Burma Coast and Bay Islands -	1,777	1,343	75	23·07
Burma, Inland - - - - -	7,146	1,365	57	29·67
Assam - - - - -	2,515	1,823	72	21·87
Bengal and Orissa - - - - -	2,922	1,206	57	9·24
Gangetic Plain and Chutia-Nagpur -	6,667	790	29	8·10
Upper Sub-Himalayan - - - - -	16,942	1,000	37	16·53
Indus Valley and North-Western Raj-putana - - - - -	16,374	1,645	45	21·80
South-Eastern Rajputana, Central India, and Gujarat - - - - -	13,951	1,041	29	7·88
Deccan - - - - -	19,076	789	28	7·55
Western Coast - - - - -	3,632	641	24	5·78
Southern India - - - - -	8,276	526	27	14·38
Hill Stations - - - - -	16,118	1,391	45	19·67

In six of the above groups the daily sick-rate was in excess of the ratio for the whole Native Army; and in six groups the death-rate was higher. The highest mortality was that of the Burma Inland group (29·67), which, however, was a considerable reduction on its rate (40·79) of the previous year.

The health of the corps of Central India and Rajputana (average strength 5,128) was worse than in the previous year. The admission-rate rose from 629 to 777 per 1,000, and the death-rate from 7·73 to 9·56. Ague was the cause of 48 per cent. of the total sickness. Cholera and pneumonia were the principal death causes, the former having accounted for 26 per cent. of the total mortality and the latter 24 per cent.

The health of the troops composing the Hyderabad Contingent also was not so good as in 1891. Of an average strength of 7,058, the admissions to hospital were equal to 681 per 1,000 of strength against 529, and the death-rate was 7·08 against 6·09. Ague was the chief cause of sickness, yielding 36 per cent. of the total sickness; and cholera, pneumonia, and injuries were the principal causes of mortality, yielding 24, 22, and 18 per cent. respectively of the total deaths.

The returns of the Madras Native Army show an improvement in the health of the troops. The ratio of admissions to hospital per 1,000 of an average strength of 25,963 was 868 against 1,017 in 1891, the daily sick-rate was 38, or 8 per 1,000 less, and the death-rate fell from 20·05 to 18·53 per 1,000. Ague caused 39 per cent. of the total sickness. From cholera there were 59 deaths, equal to 2·27 per 1,000, against 52 or 1·99 in 1891. Cholera caused 12 per cent. of the total deaths, pneumonia nearly 12 per cent., debility 11 per cent., and ague 10 per cent. Of the Native troops on service in Burma and the Andamans during 1892, the Madras Army furnished about 84 per cent. Among this portion the admissions into hospital were in the ratio of 1,349 per 1,000, the constantly sick-rate 57, and the death-rate 29·12, all showing a considerable reduction on the ratios of the previous year.

The health of the Bombay Native Army in 1892 was not so good as in the preceding year. Of an average strength of 23,355 the admissions to hospital were in the ratio of 1,130 per 1,000 against 978 in 1891, the daily sick-rate was 34, or 3 per 1,000 more, and the death-rate 10·0 against 9·63. Ague caused 50 per cent. of the total sickness. Pneumonia was the chief cause of mortality, contributing 26 per cent. of the total deaths.

III.—GENERAL POPULATION.

Vital
statistics.

Births were registered throughout all the 10 provinces of India in 1892, and the birth-rates varied between 22·12 and 39·9 per 1,000 of population under registration. The best results were obtained in Berar, the Central Provinces, and in the Punjab, their respective birth-rates being 39·9, 38·39, and 38·16; the North-Western Provinces and Oudh came next with 36·17; Bombay, 34·57, and Assam, 31·05. In all provinces except Bengal, the Punjab, Assam, and Coorg, the birth-rate exceeded the death-rate. The year was far more unhealthy than 1891, and the recorded deaths rose from 5,885,539 or 28·42 per 1,000 of registered population in 1891 to 6,920,816 or 32·47. Of the chief diseases, cholera was again very prevalent, and the total number of deaths from it were 724,015, being the highest figures recorded in any year since 1877, and an increase of 141,585 on the deaths from the disease in 1891. Every province contributed to the increase except Madras, Assam, and Berar, but especially Bengal, the North-Western Provinces and Oudh, and the Punjab. In Bengal and the Punjab the number of cholera deaths was the greatest on record. There was a considerable increase also in the deaths from fevers, which were more prevalent in all the provinces except the Central Provinces and Berar, and in most provinces caused more deaths than all the other causes put together. On the other hand, the mortality from small-pox and dysentery and diarrhoea was lower.

The deaths from the chief diseases and from all causes in the several provinces were as follows:—

	CHOLERA.		SMALL-POX.		FEVERS.		DYSENTERY AND DIARRHŒA.		DEATHS FROM ALL CAUSES.		
	Total Deaths.	Ratio per 1,000.	Total Deaths.	Ratio per 1,000.	Total Deaths.	Ratio per 1,000.	Total Deaths.	Ratio per 1,000.	Total Deaths.	Ratio per 1,000 of Population under registration.	
										1892.	1891.
Bengal, excluding Calcutta - - -	259,398	3·68	22,359	0·31	1,607,716	22·84	48,491	0·68	2,247,275	31·92	26·94
Calcutta - - - - -	2,019	2·95	21	0·03	7,618	11·17	2,364	3·46	20,180	29·60	27·94
North-Western Provinces and Oudh -	194,886	4·15	7,709	0·16	1,168,077	24·90	42,448	0·90	1,600,053	34·11	31·14
Punjab - - - - -	75,959	3·70	11,173	0·54	715,890	34·83	21,781	1·06	1,017,023	49·48	29·13
Lower Burma - - - - -	6,208	1·38	1,463	0·32	44,422	9·84	5,449	1·21	90,233	20·00	15·93
Central Provinces - - - - -	39,972	4·21	995	0·10	188,017	19·79	16,021	1·69	324,348	34·14	32·98
Coorg - - - - -	58	0·33	913	5·27	3,459	19·98	289	1·67	5,299	30·62	21·79
Assam - - - - -	21,552	4·29	1,452	0·29	93,971	18·72	15,685	3·12	171,784	34·21	29·91
Madras - - - - -	79,033	2·3	43,757	1·3	280,627	8·3	32,293	1·0	750,755	22·3	22·2
Bombay - - - - -	42,900	2·28	2,770	0·15	438,088	23·27	35,406	1·88	611,742	32·50	27·26
Berar - - - - -	2,030	0·7	68	0·02	41,661	14·6	11,200	3·9	82,124	28·8	40·6
Total - - - - -	724,015	3·39	92,680	0·43	4,589,496	21·06	231,427	1·08	6,920,816	32·47	28·42

Bengal.

Important changes in the registration of vital statistics in Bengal were introduced at the commencement of 1892. Births were registered not only in urban areas, but for the first time in the whole province, and the work of registration was entrusted entirely to the police. Improved results are already visible, "and it is now expected," the Government of India remark in their orders on the Sanitary Commissioner's (Dr. Gregg) report, "that Bengal will no longer remain one of the most backward of the provinces of India in the very important matter of reporting births and deaths." During the year 1,981,960 births were registered, equal to a birth-rate of 28·15 per 1,000, which is a great improvement when compared with 21·46, the average rate of the municipalities in 1891. Dr. Gregg, however, believes that these figures represent very imperfectly the true rate, which he estimates at something over 40 per 1,000. Compared with the statistics of other provinces the birth-rate of Bengal was the lowest with the exception of Madras and Burma. Out of the 558 rural circles in Bengal which profess to register births, only 27 returned birth-rates over 40 per 1,000, and of the 145 towns this ratio was reached only in three.

The year was exceptionally unhealthy in the province, and from all the chief diseases a higher mortality was recorded than in 1891. The number of deaths registered in 1892 amounted to 2,247,275, equal to 31·92 per 1,000 of population, against 1,896,261 or

26·94 in the previous year. In every month except December the mortality showed an increase as compared with 1891. Usually the most unhealthy period is from October to January, but in the year under notice the worst months were March and May. This Dr. Gregg attributes in a great measure to the drought of the previous months, "which diminished and deteriorated the already scanty and impure water-supply, and considerably lowered the vitality of the people." The district death-rates ranged from 43·62 in Backergunge, and 43·60 in Balasore, to 19·34 in Singhbhum. The provincial rate of mortality was exceeded in 25 of the 46 districts. Among infants the mortality was higher than usual, being in the ratio of 168·29 per 1,000 of living, against 132·95 in 1891, and 113·52, the average of the quinquennium 1887-91.

Cholera was unusually prevalent during the year, 259,398 deaths having been recorded, against 229,575 in 1891, which was itself the worst year since 1876. The death-rate was 3·68 per 1,000 of the population, or 0·42 in excess of the rate of 1891. The epidemic in the year 1891 was attributed chiefly to the Ardhodya Jog fair. The Army Sanitary Commission stated their reasons for doubting this conclusion, "and the experience of 1892," they say, "affords additional and very strong grounds in support of what we then wrote, for in 1892 there was no such fair to which the results can be ascribed, and yet the cholera of that year was even worse than it had been in 1891." The disease was present in every district and in every month of the year, and as usual affected urban more than rural circles in proportion to population, the average death-rate of the towns being 5·05 per 1,000, and of the districts exclusive of towns 3·62. The period of greatest intensity was from March to June. The disease advanced in severity from the beginning of the year and reached its maximum in May, when 56,280 deaths were recorded; it receded rapidly with the outset of the rains in October, rising again in November.

The most remarkable feature in the cholera history of the year was the excessive mortality in the Balasore, Puri, and Cuttack districts of the Orissa division, which were comparatively free from the disease in 1891, and the immunity of the Purnea, Rangpur, and Jalpaiguri districts which suffered most severely in 1891. In the three districts of the Orissa division the cholera death-rates rose from 2·06, 1·09, and 1·72, respectively to 15·00, 11·30, and 10·98, while in Purnea the rate declined from 11·08 to 0·14, in Rangpur from 9·36 to 0·28, and in Jalpaiguri from 9·93 to 0·59. The increase in the cholera mortality was generally attributed to the deficient rainfall in the earlier months of the year, which caused wells and tanks everywhere to run dry, and drove the people to drink impure water. "Many Civil Surgeons," Dr. Gregg states, "refer the origin of cholera to importation by human intercourse from places said to be suffering from the disease, but to its almost simultaneous appearance in many centres in a district there is no satisfactory explanation given, nor is the strange exemption of certain areas environed by cholera considered and discussed. On the whole, however, the evidence goes to show that the best preventive is the possession of a good water-supply. This is in accordance with my own experience and the experience of sanitary officers all over India."

The mortality from small-pox, though insignificant as compared with that from other diseases, was the highest on record since 1882. The number of deaths reported from the disease was 22,359 or 0·31 per 1,000, against 16,193 or 0·23 in 1891. As in 1891 the prevalence of small-pox was practically limited to Orissa, Chota Nagpur, and Midnapore, where, owing to the strong prejudices of the people, vaccination has not made much progress. It is expected that under the new decentralisation scheme (referred to at p. 22), by which Civil Surgeons have been made directly responsible for the vaccinations of their districts, these backward parts of the province will be efficiently protected, and enjoy the same degree of immunity from small-pox as the rest of the province. Nearly 66 per cent. of the small-pox deaths occurred among children under 12 years of age, the mortality among infants under one year being in the proportion of 17·18 per cent. of the total small-pox deaths, among children from one to six years 31·18, and from six to twelve years 17·60. "Nothing could show more clearly than these figures," Dr. Gregg remarks, "the necessity that exists for increased vigilance on the part of the Vaccination Department."

Fevers also prevailed much more extensively and proved considerably more fatal during 1892 than in any year within the past decade. The deaths registered under this head amounted to 1,607,716 or 22·84 per 1,000, against 1,333,395 or 18·94 in 1891, and a 10 years' average rate of 15·17 per 1,000. "The increasing mortality from this cause," Dr. Gregg writes, "is truly lamentable. . . . Ever since I have held the office of Sanitary Commissioner, i.e., for the last five years, I have

" never lost an opportunity of impressing upon district officers, district boards, municipalities, and the Government, that the principal causes which are operating to produce this high and increasing rate of mortality are obstruction to drainage and bad drinking water, and that until the one is removed and the other improved, there is no hope of a diminution of a death-rate from this disease which is nearly three-fourths of the entire death-rate of the province, and represents only about a twentieth part of the sufferings of the people." In six districts the fever mortality exceeded 30 per 1,000 (Rajshahi recording the highest rate of 37·13) all of which were the most fever-stricken districts in 1891, and in 10 others the death-rate was above 25 per 1,000. Orissa division, which suffered most severely from cholera and small-pox, was singularly free from fever, the death-rate being only 12·70 per 1,000. Dr. Rice, Sanitary Commissioner with the Government of India, reports (Abstract, p. 92) that with a view to lessen the suffering from periodic fever under which the people of Bengal labour, a scheme was put into practice at the close of the year by which quinine can be purchased in five grain doses in most of the post offices of the provinces for one pice a packet, and according to the latest information the plan had been favourably patronised by the people.

The registered mortality from dysentery and diarrhœa was 48,491 or 0·63 per 1,000 of population, against 43,183 or 0·61 in 1891. As usual Darjeeling district recorded the highest death-rate from these causes of 5·57, followed by Balsasore, Puri, Howrah, and Lohardaga, with rates of 4·69, 3·56, 3·81, and 3·26.

The health of Calcutta, including the suburbs, during 1892 was again unsatisfactory. The registered deaths fell from 21,157 or 31·5 per 1,000 to 20,180 or 29·60. From cholera the deaths fell from 2,953 to 2,019. The deaths from fevers numbered 7,618 or 11·17 per 1,000, against 7,851 in 1891; from small-pox there were 21 deaths against 13, and from dysentery and diarrhœa 2,364 against 2,716.

On the whole the general results of the registration of births and deaths in the North-Western Provinces and Oudh during 1892 show that real progress is being made in this important work. "Ordinary statisticians in England," the Sanitary Commissioner, Dr. Hutcheson, says, "are scarcely aware of the fact that nearly every birth and death occurring throughout the United Provinces, with a population much in excess of the United Kingdom, is registered in writing with a certain amount of care by a more or less responsible, although unprofessional, agency." The registered births numbered 1,696,427 or 36·17 per 1,000 of population, against 1,559,888 or 33·26 in 1891. The district birth rates ranged from 20·45 per 1,000 in Dehra Dun to 46·35 in Moradabad, the extremes being at greater variance than in the previous year. The births exceeded the deaths by 96,374. The year 1892 was an unhealthy one, and the registered deaths rose from 1,460,732 or 31·14 per 1,000, to 1,600,053 or 34·11, an increase of 139,321, the greater part being due to the extraordinary prevalence of fevers, especially in the months of March, April, and May, when a very high temperature was recorded, and to a severe cholera epidemic. According to districts the death-rates varied in relation to the incidence of cholera, the highest (52·35) being recorded by Naini Tal, and the lowest (23·13) by Ghazipur. It is noticed, however, that with an increase in the provincial death-rate there was a considerable decrease in the town and municipal death-rate, especially in cholera mortality, as compared with rural tracts. "Extensive sanitary works," Dr. Hutcheson remarks, "are undoubtedly effecting a marked change for the good in the health of the urban areas," and the Army Sanitary Commission have no doubt that this improvement will become more and more apparent as these works extend.

Cholera was again epidemic in the province, and the mortality from the disease was the highest on record except that of 1887. The deaths rose from 169,013 or 3·60 per 1,000 in 1891 to 194,886 or 4·15. All the districts suffered from the disease, and among those showing exceptional mortality were Dehra Dun 18·13 per 1,000, Garhwal 14·57, and Bahraich 13·80, and in four others, Bara Banki, Almora, Gonda, and Hardoi the cholera death-rate exceeded 10 per 1,000. Of the total deaths, two-thirds (129,066) took place in the three months of April, May, and June. The epidemic showed signs of decreasing virulence in November, which became more evident in December. As already stated the municipal towns experienced a marked immunity from the disease, their average rate of mortality being 1·99 as compared with the provincial general ratio of 4·15 and the rural ratio of 4·31. The Hurdwar fair of 1892, unlike that of the previous year, was attended with a serious outbreak of the disease. It broke out on the 22nd March, a few days before the

great bathing festival, and the assemblage of 70,000 was dispersed. It is estimated that 200,000 persons on the move by rail and road to the fair were stopped *en route* and ordered to return to their homes. The same precautionary measures were taken as on the previous occasion, except that "the sending of a constant stream of fresh water all through the bathing pool, which removed all impurities very quickly, was less effectively applied than in the former year," owing to a lessened volume of water in the river and to the obstruction of the current by impediments which have since been removed. The Army Sanitary Commission doubt whether the difference in the results of the two years can be so explained, considering "that specimens of the water from the bathing pool in 1891 on examination were declared to be teeming with what were pronounced to be cholera bacilli." As regards the theory that the disease was disseminated by the dispersed pilgrims, the Commission point to the monthly statistics in each district as evidence of the inadequacy of the theory. "Any arrangements for the suppression of cholera," they say, "which are based on endeavours to prevent personal contagion must end in failure, especially in a country like India where such arrangements are simply impossible. The only refuge is to be found in sanitary improvements, especially in securing a good wholesome water supply, and we are glad to see that in the North-West Provinces all the authorities concerned are fully alive to the importance of such improvements." Towards the close of the year a committee of experts, assisted by native gentlemen, was appointed to advise the Government on the remedies to be applied to meet such evils as the pollution of the water in which the pilgrims bathe, and overcrowding, and to report on the practicability of providing Hurdwar with pure drinking water, and also to make any other suggestions for the health, comfort, and convenience of the pilgrims at future fairs.

Owing to the great progress in vaccination in the province the mortality from small-pox fell to the lowest figure on record, only 7,709 deaths having been recorded from this disease, equal to 0.16 per 1,000, against 26,355 or 0.56 in 1891. Though all the districts were affected, in no instance did the death-rate from the disease reach 1 per 1,000, and it is worthy of notice that only one death was registered in the Cawnpore district, with a population of nearly a million and a quarter, only three deaths in Meerut district and two in Lucknow, with populations of 1,391,458 and 774,163 respectively.

The deaths registered under fevers numbered 1,168,077 against 1,033,059 in 1891. and the death-rate rose from 22.02 to 24.90. Dr. Hutcheson again points out, that this mortality represents deaths from a great variety of causes, of which fever may or may not be a symptom, and he reckons the actual fever mortality at 30 per cent. of the total deaths, instead of 73 per cent. as the general returns indicate. Among districts, Naini Tal recorded the highest fever death-rate of 41.22 per 1,000, followed by Saharanpur with 36.34, and ratios of over 30 per 1,000 were also noted in the districts of Meerut, Muzaffarnagar, Bulandshahr, Bahraich, and Kheri.

From dysentery and diarrhoea there were 42,448 deaths registered against 49,586 in 1891, and the death-rate declined from 1.06 to 0.90. As usual the mortality was highest in the hill tracts, the two districts of Garhwal and Almora having recorded death-rates under this head of 7.62 and 6.02 respectively. Dehra Dun followed with 3.85.

More births were recorded in the Punjab during 1892 than in any year since the registration of births was commenced (in 1880), except 1884. The number registered was 784,356, giving a birth-rate of 38.16 per 1,000, against 699,242 or 34.02 in 1891. The Sanitary Commissioner attributed the improved birth-rate partly to the year 1891 having been a fairly healthy one, and partly to greater accuracy in registration. The district birth-rates ranged from 50.80 in Sialkot to 15.12 in Simla. In the frontier districts the birth-rate, though still low, showed a decided improvement generally.

The year under notice was exceptionally unhealthy in the Punjab. An epidemic of cholera travelled through the province, and was succeeded by an outbreak of malarial fever of a serious nature, caused by the exceptionally heavy rains. The registered deaths amounted to 1,017,023 or 49.48 per 1,000, against 598,789 or 29.13 in 1891, showing an increase in 1892 of 418,234 or 20.35 per 1,000. The death-rate exceeded the birth-rate by 11.32 per 1,000, and the number of deaths was greater in all the districts but two, Gurgaon and Jullundur, in which the birth-rates were only 0.71 and 0.23 per 1,000 respectively higher than the death-rates. In every district of the province, with the exception of Simla, the registered death-rate was higher than the average rate of the previous five years. Of the 31 districts in the province only two returned a death-rate of less than 40 per 1,000. The districts

of Bannu, Gurdāspur, Sialkot, Montgomery, Shahpur, and Mooltan, recorded the highest mortality, their ratios being 66·69, 63·18, 62·44, 57·85, 56·58, and 56·38 per 1,000 respectively. The abnormally high mortality in the province was due principally to excessive outbreaks of fever, cholera, and influenza. No less than 40 per cent. of the total deaths were recorded in the months of September, October, and November. The death-rate among the infant population was excessively high, aggregating nearly 30 per cent. of the children born during the year.

Of the chief diseases, cholera, which appeared in epidemic form in the province for the sixth year in succession, accounted for 75,959 deaths, equal to a death-rate of 3·70 per 1,000, as compared with 10,107 or 0·49 in 1891. Every district suffered, the highest ratio registered being 11·36 per 1,000 in Bannu; Kurnal, Montgomery, and Hissar followed with ratios of 8·72, 7·36, and 6·83 respectively. In the remaining districts the ratios varied between 6·67 in Kangra and 0·42 in Muzaffargarh. The Sanitary Commissioner, Surgeon-Colonel Stephen, attributes the severity of the outbreak and the rapid diffusion of the disease to returning pilgrims from the Hurdwar fair; but in discussing this matter the Army Sanitary Commission notice that many of the districts in the immediate vicinity of Hurdwar suffered very little, while Bannu, one of the most remote districts, was the chief sufferer. "Even if it were proved "beyond all doubt," the Commission remark, "that the pilgrims were the cause of the epidemic, what is to be done? Are all fairs to be stopped, or are the people to be taught to seek security by keeping the pilgrims at a distance? To stop the fairs is hardly to be thought of. To teach the people that safety is to be found in avoiding others and especially those that are sick, is calculated to do much harm, because it diverts their attention from those sanitary improvements which are so necessary for the public health. Nothing has done so much to check such improvements as quarantine. Countries which have trusted to the delusive protection which quarantine promises have neglected to deal with the real causes of disease existing in their midst, and have continued to suffer. The same must be the result of all teaching of a similar character to the people of India."

From small-pox 11,173 deaths were registered, yielding a ratio of 0·54 per 1,000, against 3,426 or 0·17 in 1891. The district of Bannu again recorded the highest death-rate from the disease of 4·08; Kohat, Peshawar, and Ludhiana, followed with respective death-rates of 2·45, 1·81, and 1·23 per 1,000, and the remaining district rates ranged from 1·00 in Simla to 0·004 in Jang and Gujranwala. Special means have been taken to reduce the mortality from small-pox in the province. When it is observed from the weekly death returns that an outbreak of the disease has occurred in any place, the attention of the Civil Surgeon is called to the point, and if the outbreak occurs during the vaccination season he is requested to have as many unprotected persons vaccinated as possible, and to have re-vaccinations done in suitable cases.

The mortality recorded under fevers was lamentably high, the deaths amounting to 715,890 or 34·83 per 1,000, against 442,254 or 21·52 in 1891, and a five years' average rate of 23·27. The fever death-rate was therefore nearly ten times as high as that from cholera, and this notwithstanding the year was the worst on record for that disease. With the exception of Gurgaon the recorded mortality from fevers was higher in all districts than the average rate, and in some cases the excess was very great. Gurdaspur, with a fever death-rate of 49·53, suffered more than any other district, the neighbouring district of Sialkot coming next with 44·70, and Bannu, Mooltan, Dera Ismail Khan, and Muzaffargarh, following with rates ranging from 43·58 to 41·17 per 1,000. The great majority of the deaths were of malarial origin and occurred in the last four months of the year. As regards the causes of this excessive prevalence of fever, the Sanitary Commissioner says the comparative scarcity of food, which was experienced in many places, was doubtless a predisposing cause for the severe outbreak which occurred in the last four months of the year, but the principal cause was the excessive rainfall of the third quarter of the year. In the flat Punjab plains, it is observed, heavy rains soon cause floods, and when this is succeeded by a high temperature a severe outbreak of fever invariably follows. The chief remedy is efficient drainage, and, as far as funds will permit, schemes were being gradually carried out to obtain better drainage in the water-logged tracts. Other means were also being taken with a view to preventing a recurrence of such an appalling fever mortality.

Under dysentery and diarrhoea 21,781 deaths were registered, equal to 1·06 per 1,000 of population, against 12,152 or 0·59 in 1891. The districts of Guadaspur and Sialkot, which recorded the highest fever mortality, also returned the highest death-rates from dysentery and diarrhoea, viz., 2·45 and 2·27 respectively.

Registration of vital statistics in Burma during 1892 was again confined to the lower Burma. portion of the province, and the Chief Commissioner considers that it may with advantage be postponed in Upper Burma districts for a few years. The results show an improvement on those for 1891, though they are still far from satisfactory. It is stated that rules for the registration of vital statistics have now been made by all the municipalities except one in Lower Burma, and that in each town a special staff is entertained for the purpose. The total number of births registered in 1892 was 112,070, or 24·83 per 1,000 of population, as compared with 95,332 or 20·74 in the previous year. In the different districts the birth-rate ranged from 18·36 in Shwegyin to 37·44 in Sandoway. For the whole province the excess of births over deaths was 5 per 1,000, but in the Hanthawaddy and Akyab districts the deaths were in excess of the births, a result due to the preponderance of the male sex among the large population of Indian immigrants in the towns of Rangoon and Akyab in these districts. Deaths were registered to the number of 90,233 or 20·00 per 1,000, against 73·190 or 15·93. The district rates of mortality varied between 29·91 in Akyab and 12·55 in Tavoy. Of the total deaths more than one-fifth (18,849) were children under one year old.

All the chief diseases contributed to the excess mortality of the year. Cholera caused 6,208 deaths, being in the ratio of 1·38 per 1,000 of population, against 2,400 or 0·52 in 1891. Every district was affected except Tavoy and Mergui, their immunity being attributed to their isolated position, as in the previous year they were almost free from the disease. Over a fourth of the deaths occurred in Akyab district, the number being 1,592 against only 12 in the previous year. Cholera was present in the province during each month of the year. The largest number of fatal cases (858) was registered in April, and the smallest (105) in December. But although the disease was peculiarly fatal throughout the province, the mortality from this cause in some towns, especially Rangoon, Prome, and Thaton, where the water-supply arrangements are satisfactory, was inconsiderable. Out of 17,414 villages only 8½ per cent. registered cholera deaths.

There were 1,463 deaths from small-pox registered in the province, yielding a rate of 0·32 per 1,000, against 1,326 or 0·29 in 1891. No deaths from this cause were recorded in the Sandoway, Mergui, and Toungoo districts, and in several others the mortality was very low, while, on the other hand, considerably more than a half (824) of the deaths occurred in Akyab. Of the total number of those who died from small-pox, 979 were under 12 years of age, and of these 274 were infants. The Sanitary Commissioner, Surgeon-Major Dalzell, says that small-pox is extensively propagated in the province by inoculation, and that, the people having a deep-rooted faith in it, as soon as the disease makes its appearance the inoculators are busy at work, with the result that in a short time it is spread over a large area. The Army Sanitary Commission, however, do not think the facts warrant this theory, as small-pox was very widely spread over the province, existing in several districts the whole year and in others for a great part of the year, while nowhere was there any violent local outbreak of the disease.

The registered deaths from fevers were 22 per cent. in excess of any other year, and almost equalled the aggregate number of deaths from all other causes taken together. In the year under notice 44,422 fever deaths were recorded, equal to a rate of 9·84 per 1,000, against 35,658 or 7·76 in 1891. The increase was distributed throughout the whole province, but the chief sufferer was the Arakan division, where fever was the cause of 10 out of every 17 deaths. The highest rates of mortality under this head were returned from the three districts of this division, viz., Akyab 18·21, Sandoway 15·16, and Kyaukpyu 14·64. These high ratios were attributed to the unhealthiness of the division. "The very heavy rainfall and the water-logged condition of the low country, are," the Sanitary Commissioner states, "I think sufficient to account for the intensity of malarial influences which prevail there."

Dysentery and diarrhoea were also more fatal in 1892 than for several previous years. The number of deaths recorded was 5,449 or 1·21 per 1,000, as compared with 4,162 or 0·91 in 1891. As with other diseases the mortality was heaviest in the Arakan division.

The year 1892 in the Central Provinces was, generally speaking, more healthy than its predecessor, although there was a slight increase of mortality due to the prevalence of cholera in a few districts. Fewer births were registered, the number being 364,745, representing 38·39 per 1,000 of population, against 379,918 or 39·99 in 1891. The decrease of 15,173 was spread over 15 of the 20 districts. The highest district birth-rate of 45·03 was recorded by Chhindwara, and the lowest of 34·79 by Burhanpur. Out of the total 20 registering districts, the birth-rate was above the provincial average

Central Provinces.

in 10, below it in 7, and nearly equal in 3. In 17 districts more births were registered than deaths, the excess for the province being in the ratio of 4·25. First among the districts with more deaths than births was Raipur with an excess ratio of 10·80, due to the terrible mortality from cholera, which carried off about 17,000 persons. The total number of deaths registered in the province was 324,348, or 34·14 per 1,000, against 313,364 or 32·98 in 1891. The increase of 10,984 deaths was entirely due to the severe prevalence of cholera and to a slight increase of 247 in small-pox, for there was a decrease of deaths under all other heads. The highest death-rate recorded was 46·66 per 1,000 in Raipur, and the lowest 27·93 in Bilaspur.

Of the chief diseases cholera accounted for 39,972 of the total deaths, yielding a ratio of 4·21 per 1,000 of population, nearly double the mortality of 1891. The disease prevailed more or less throughout the province, but chiefly in the three districts of the Mahanadi division, where the number of deaths exceeded 25,000. One half of the 20 districts suffered more and one half less than in the previous year, the chief of the former being the above three districts, viz., Raipur with a ratio of 13·50 against 1·46 in 1891, Bilaspur 8·25 against 0·96, and Sambalpur 4·84 against 0·03. In nearly all districts the disease is said to have been imported and disseminated by means of pilgrims, a doctrine which the Army Sanitary Commission notice "is so easy that it meets with ready acceptance, and the facts on which it is based are frequently not examined as they ought to be." The Officiating Sanitary Commissioner (Deputy-Surgeon W. Center) attaches great importance to the Majh Mela fair at Allahabad as the centre from which the epidemic began, but Dr. Hutcheson in his Report on the North-Western Provinces and Oudh states there was no cholera at that fair, and only three deaths were returned for the whole district in January. "Pilgrims coming from the fair," the Commission remark, "doubtless were attacked with cholera in the Central Provinces and elsewhere, not, so far as the evidence goes, because of the fair, but because they were persons undergoing more than ordinary privation and fatigue, and, therefore, more subject to attack than they otherwise would have been." In further discussing this theory of importation the Commission urge the necessity for practical action being directed to places and not to persons. They contend that more desirable results are to be obtained by improvement of localities in which the people live than by measures for relieving the sick. "Whatever may be said," they say, "in regard to other countries, and on that question there is no occasion to enter, there cannot be the smallest doubt that in India it must be by the improvement of localities that any decided results can be hoped for."

Small-pox was slightly more prevalent than in 1891, and the deaths rose from 748, or 0·08 per 1,000 to 995 or 0·10. Three districts out of the 20 were exempt from the disease, and in a fourth (Nimar) but one death was returned. In fact only in the five districts of Bilaspur, Saugor, Raipur, Chanda, and Sambalpur, was the mortality at all severe. These favourable results, the Army Sanitary Commission observe, speak well for the vaccination work of the province.

Fevers accounted for more than a half of the year's mortality. The number of deaths was 188,017 or 2,533 less than in 1891, the provincial death-rate being 19·79 against 20·05. Out of the 20 districts 13 showed a decrease in mortality and seven an increase, as compared with the results of 1891. Nimar headed the list with a ratio of 31·37, followed by Mandla with 25·84, while the minimum of 9·98 was returned by Betul.

The deaths registered from dysentery and diarrhoea amounted to 16,021 or 1·69 per 1,000 against 20,889 or 2·20 in 1891. The decrease of 4,868 was spread over almost all the districts. In a few the rates were rather high, but only in five districts was the provincial ratio exceeded, that of Sambalpur being the highest (6·92).

Assam.

Greater attention appears to have been paid to the registration of vital statistics in Assam during 1892 than in previous years. The number of births registered rose from 143,548 or 28·59 per 1,000 of population in 1891 to 155,909 or 31·05, which is the highest ratio on record. The increase of 12,361 births was contributed to by every district, but the most marked improvement occurred in Kamrup, Lakhimpur, Goalpara, and Sibsagar districts, where the birth-rates increased from 21·32, 21·70, 32·51 and 21·77 respectively, to 28·50, 27·57, 37·06, and 25·72. The number of deaths registered rose from 150,156 or 29·91 per 1,000 in 1891 to 171,784 or 34·21 in the year under review, the increase being attributed partly to improvement in registration and partly to a heavier rainfall throughout the province. Every district recorded a higher rate of mortality than in 1891 except Cachar and Goalpara. The average death-rate of the province exceeded the birth-rate by 3·16 per 1,000.

Of the chief diseases cholera, though slightly less prevalent during 1892 than in 1891, was very fatal. The total deaths from the disease numbered 21,552 or 4.29 per 1,000, against 23,882 or 4.76, and against 2.84 the ratio of the quinquennial period 1886-90. All the districts were affected, their ratios ranging from 1.76 in Goalpara to 7.39 in Kamrup. The latter ratio was nearly double that recorded in the previous year, and showed an increase of 2,112 deaths. Sylhet district also recorded 1,639 more deaths from cholera, Sibsagar 371, Lakhimpur 336, and the Khasi and Jaintia Hills 184. In the remaining four districts the mortality was lower than in 1891. Out of 13,624 villages in the province only 18 per cent. recorded deaths from cholera. "With such a history of wide-spread persistence, and yet at the same time of remarkable isolation, it would be very difficult," the Army Sanitary Commission remark, "to fit in any theory of importation to account for the disease."

The mortality from small-pox was lower in 1892 than in any year since 1879, the deaths numbering only 1,452 or 0.29 per 1,000, against 2,361 or 0.47 in 1891. Kamrup was the only district in which the death-rate was at all high (1.62 per 1,000). Nowgong district, with a population of 344,141, enjoyed a complete immunity from the disease, and only one death occurred in the Khasi and Jaintia Hills, and three in Lakhimpur. Of the total small-pox deaths in the province 229 occurred among infants under one year and 869 among children under 12.

The deaths registered under fevers aggregated 93,971, equivalent to a rate of 18.72 per 1,000 of population, exceeding the number recorded in 1891 by 18,006 or 3.59. Of the nine districts Goalpara recorded the highest fever death-rate of 29.79 and Lakhimpur the lowest of 13.38. The deaths recorded under this head included 6,734 as due to kala azar against 9,937 in 1891. This disease was rapidly decreasing in the Kamrup and Goalpara districts, but was steadily advancing in Darrang and Nowgong, so much so in fact that 10 new dispensaries in these two districts were opened or sanctioned during the year with the special object of coping with it. Further inquiry was made concerning kala azar with the result that the cause had yet to be discovered, for the *dochmius duodenalis*, or *anchylostomum duodenale*, which had been claimed as the cause of the disease, was proved to exist in persons just arrived in the province from other and distant parts of India. "The practical outcome of the whole discussion," the Army Sanitary Commission observe, "would seem to be what we suggested in our remarks on the Assam Report for 1891, that the best method of dealing with this question does not consist in attempts directed to prevent the importation of the parasite, which, even if it were beyond all doubt the cause of the disease, could never be successful, but in the improvement of the local conditions under which the people live." Active measures in this direction had already commenced in affected parts.

Under dysentery and diarrhoea 15,685 deaths were registered, being in the ratio of 3.12 per 1,000 against 14,418 or 2.87 in 1891. In the opinion of the Sanitary Commissioner, Dr. Costello, the excess in some districts was due partly to misregistration of diarrhoea for cholera.

The results of birth registration in the Madras Presidency during 1892 show a Madras. diminution of 79,209 births as compared with the previous year, the number having decreased from 924,238 or 27.4 per 1,000 of population to 845,029 or 25.1. The falling off was ascribed to the distress that prevailed during the year under report and the previous year, and also, in great measure, to defective registration, though the Sanitary Commissioner (Surgeon-Colonel Laing) does not see any reason to suppose that registration retrograded in 1892; "and until it is made compulsory in rural tracts," he says, "the returns cannot be expected to be accurate." In all the 22 districts, except South Canara, Tinnevely, and Godavari, the birth-rates were lower than in 1891, and in no district was the supposed standard of 40 per 1,000 reached, the highest recorded being 36.8 in Madras. In only three other districts was the rate above 30 per 1,000, while in 17 it was between 20 and 30, and in Ganjam it was 17.8. The special attention of the collectors concerned has again been drawn by the Local Government to the matter of registration. The birth-rate exceeded the death-rate in 15 out of the 22 districts.

The year was generally an unhealthy one, and the number of deaths registered was 750,755 or 22.3 per 1,000 of population, a higher rate than had been recorded since 1878, though, compared with 1891, there was very little difference, the deaths in that year being 747,553 or 22.2 per 1,000. The mortality amongst infants was, as usual, high. Of the total deaths, 146,948 or 19.6 per cent. were children under one year of age, and calculated on the number of children born during the year, the death-rate of

infants equalled 173.9 per 1,000. The death-rate varied considerably in the different districts, Madras recording the highest of 46.5, and the remainder ranging from 35.1 in Kurnool to 14.3 in Ganjam. In 11 districts the death-rates were lower than in 1891, and in 11 they were higher. The greatest decrease occurred in the South Arcot district, the death-rate for 1892 being 18.8 per 1,000 as compared with 29.6 in 1891, and was mainly due to a lower mortality from cholera and small-pox. Madras also showed a marked decrease of nearly 7 per 1,000, owing to fewer deaths having been recorded under cholera, dysentery and diarrhoea, and all other causes. The average death-rate of the 55 municipal towns was 29.4 per 1,000, or 7.5 higher than the district rate, and was made up of ratios ranging from 18.2 in Salem to 55.2 in Kurnool.

Deaths from cholera in the Presidency were fewer than in 1891 by 19,740, the number having declined from 98,773 or 2.9 per 1,000 to 79,033 or 2.3. The mortality in 1892 was, however, larger than that of any other year since 1882. The disease prevailed throughout the year, and visited every district, being most severe in Godavari, Kurnool, and Tanjore, where the death-rates were 6.5, 6.0, and 4.1 per 1,000 respectively. In the first of these districts cholera prevailed for about six months, and the deaths rose from 1,496 in 1891 to 13,618. In Kurnool the deaths from the disease amounted to 4,886, the largest number recorded since 1878. Tanjore registered 9,093 deaths from this cause against 6,565 in 1891, the great majority having occurred in the months of January (4,549) and February (1,946). Out of 44,678 villages in the Presidency, 17½ per cent. were affected by cholera. The highest percentage occurred in Kurnool, where 36 per cent. of the villages were attacked. Only two out of the 55 municipalities, Palni and Ootacamund, were free from cholera. The disease affected the urban more than the rural circles, the death-rate for municipal towns being 3.2 or 0.9 more than that of the districts. In summing up the year's history of cholera in the Presidency, the Sanitary Commissioner says:—"Although many deaths were registered from cholera in 1892, still the year has been one of subsided activity with regard to this disease in the Presidency. No new light has been thrown upon the etiology of the disease, but there is sufficient evidence to show that insanitary conditions tend to localise cholera, and that the best way of preventing the origin and spread of cholera is to remove all local insanitary conditions and carry out the sanitary measures which are known to be antagonistic to the prevalence of the disease." In these remarks the Army Sanitary Commission entirely agree.

Small-pox caused 43,757 deaths, equal to 1.3 per 1,000 of population, an excess of 2,435 on the mortality of 1891. The increase was chiefly due to the prevalence of the disease in the Malabar and Godavari districts, where 7,320 more deaths were registered in 1892 than in 1891. The death-rate in Malabar from this cause was 4.4 per 1,000, but here, it is stated, vaccination is carried on under many disadvantages: the houses are scattered and not collected together as in other districts forming villages and towns, and the females, who appear to have a preponderating influence in the household, are greatly opposed to vaccination, while the Moplah population, which is very conservative and ignorant, oppose any new practice. Small-pox deaths were registered in 47 of the 55 municipal towns, Cochin heading the list with a ratio of 19.9 per 1,000. Vaccination is not compulsory in this municipality, and the people are opposed to it, many believing that when small-pox is prevalent vaccination will cause an attack of the disease.

The deaths ascribed to fevers were more numerous than in any year since 1879, and numbered 280,627 or 8.3 per 1,000, against 247,029 or 7.3 in 1891. The principal cause of this great increase was malarial fever, due to the heavy rainfall of the year, and also to the rise in the prices of food grains and the consequent distress which prevailed. As in previous years Kurnool suffered more than any other district, recording a fever death-rate of 22.8 per 1,000, followed by Nilgiris, Cuddapah, Vizagapatam, and Madras, with ratios ranging from 17.7 to 15.6. In municipal areas the mortality, as usual, was less than in rural tracts, the Presidency district rate of 8.4 per 1,000 being 1.4 greater than the municipal rate.

The deaths registered as due to dysentery and diarrhoea numbered 32,293 or 1.930 less than in 1891, the death-rate, 1.0 per 1,000, being the same in both years. "There is no doubt," the Sanitary Commissioner remarks, "that many of the deaths may be attributed to the people having to resort to unwholesome kinds of food owing to failure of crops and the high prices of food." Madras district recorded the highest mortality under this head of 8.9 per 1,000, followed by Chingleput with a ratio of 3.2.

Improvement is still needed in the registration of vital statistics in the Bombay Presidency, especially in the Sind districts. During 1892 there were 650,667 births registered, equivalent to 34·57 per 1,000 of population, against 682,677 or 36·27 in 1891. Of the 24 districts in the Presidency, all but five (Nasik, Thana, Kolaba, Ratnagiri, and Kanara) recorded fewer births than in the previous year. Three districts recorded birth-rates of over 40 per 1,000, and 15 of over 30 per 1,000, the ratios of the remaining five districts ranged between 28·22 in Shikarpur and 16·57 in Thar and Parkar.

The year 1892 was more unhealthy than its predecessor, and the registered deaths rose from 513,132 or 27·26 per 1,000 to 611,742 or 32·50, an increase of 98,610. The Acting Sanitary Commissioner attributed the unhealthiness of the year to the continuance of influenza in Sind and Gujarat, to scarcity in parts of the southern registration district in the first half of the year, and to the prevalence of cholera. In the districts the death-rates varied between 47·51 per 1,000 in Ahmedabad and 20·93 in Ratnagiri. As usual, the mortality amongst young children was very high in comparison with other periods of life. Among infants under one year the percentage of total deaths was 19·95, and among children above one and under five years the percentage was 20·92, together representing nearly 41 per cent. of the year's mortality.

Under all the chief death causes, except dysentery and diarrhœa, more deaths were registered than in 1891. Cholera prevailed to an unusual extent, and accounted for 42,900 deaths, or 25,050 in excess, the rate of mortality being 2·28 against 0·95. The disease prevailed more or less in all parts of the Presidency throughout the year, but especially in Sind. Among the districts most severely affected were Karachi, Dharwar, and Hyderabad, with cholera death-rates of 9·98, 7·92, and 6·27 respectively. Out of 25,206 villages, cholera was present in 12·20 per cent. The highest percentage occurred in Karachi district, where, out of its 791 villages, 53·60 per cent. were attacked. The great fair held in July at Pandharpur, in Sholapur district, passed off without any outbreak of the disease, the first case having occurred when the fair was practically over. The disease, however, was prevalent only to a very small extent in the district. The Acting Sanitary Commissioner states that, in his experience, cholera occurs at fairs only when it is previously prevalent in the district in which the fair is held.

The number of deaths registered from small-pox, though not very great, was almost double that of the preceding year, but was considerably below the average. The fatal cases amounted to 2,770 or 0·15 per 1,000, against 1,491 or 0·08 in 1891. In the districts the highest death-rate, 0·67 per 1,000, was registered in the town and island of Bombay, followed by 0·46 in Dharwar. Only one district (Upper Sind Frontier) out of the 24 was free of the disease. According to age, 24·99 per cent. of the deaths occurred amongst infants under one year of age, and 46·71 per cent. took place among children between one and 12 years of age. In their remarks on the influence of vaccination on small-pox, the Army Sanitary Commission say there is strong evidence in the Presidency of the excellent work done by the Vaccination Department, "but the more strikingly it can be exhibited the better, for there could be no more effective means of overcoming prejudices and demonstrating the real protection from small-pox which successful vaccination offers."

Deaths from fever increased from 368,913 or 19·60 per 1,000 of population in 1891 to 438,038 or 23·27. This rate was exceeded by 11 districts, the highest being 41·41 in Ahmedabad, followed by Broach, Shikarpur, Kaira, and Surat, with rates of over 30 per 1,000. The most fatal month was January, when 57,782 deaths were reported, and the minimum mortality took place in June, when there were 25,480 deaths.

Dysentery and diarrhœa were the cause of 35,406 deaths, equal to 1·88 per 1,000 of population, against 37,728 or 2·00 in 1891. In nine districts the mortality under this head was less than in the preceding year, and in the remainder it was slightly higher. The highest rate was recorded by Belgaum 5·95, Dharwar following with 4·97, and the lowest by Hyderabad, 0·06.

The number of births registered in Berar during 1892 was considerably below that of the previous year, viz., 113,640 or 39·9 per 1,000, against 121,755 or 42·8. The decrease was spread over all the districts of the province. Akola district recorded the highest birth-rate of 43·7, Buldana following with 43·0; the rates of the remaining four districts varied from 42·3 in Ellichpur to 33·1 in Wun. The year was much more healthy than 1891, and the deaths fell from 115,558 or 40·6 per 1,000 to 82,124 or 28·8. The district death-rates ranged from 33·2 in Ellichpur to 24·0 in Wun. For towns the mortality rate was 29·3 per 1,000 as compared with 28·8 for rural circles. The

registration of vital statistics in the towns had hitherto been more defective than in rural circles, but in 1892 the reverse seems to have been the case. Improvement, however, is expected from the enforcement of the rules which have been framed concerning the inspection of registers by the officers of the Vaccination Department during their tours.

Cholera was prevalent throughout the whole of the province in 1892, but the area affected was greatly reduced, and the disease was of a milder type than in the previous year, the deaths having fallen from 7,958 or 2·8 per 1,000 to 2,030 or 0·7. Of the total 5,718 villages in the province only 145 reported cholera deaths. "These figures," the Army Sanitary Commission remark, "are very striking, and have a direct bearing on the causation, and, what is still more important, the prevention of cholera. At six places, where outbreaks occurred, the disease was reported to have been due to importation. But even if this had been proved beyond all manner of doubt, it would afford but little or no practical help in dealing with the question. It is simply impossible to devise measures which could prevent such importation, but happily the general history of the disease, as indicated in the figures above cited, shows very clearly that far too great stress has been laid on this supposed cause of cholera epidemic, and that other causes have to be taken into account, which fortunately can be dealt with much more easily and effectively than attempts at controlling the free and unrestricted movements of the people. These causes are the local insanitary conditions which so frequently prevail in Indian towns and villages."

The registered deaths from small-pox were just double the number of 1891. The disease, however, was again very slight, and the low mortality of 68, as compared with 34 in 1891, bears evidence of the efficiency of vaccination. As an instance of the excellent vaccination work done in this province, the Army Sanitary Commission notice that, while in the 12 years 1869 to 1880 the total number of small-pox deaths was 38,840, in the 12 years ending 1892 the number was only 8,828.

From fevers the deaths fell from 49,850 or 17·5 per 1,000 in 1891 to 41,661 or 14·6. The district ratios ranged between 12·0 in Basim and 18·0 in Wun. The high fever rate of Wun was attributed to the district being more malarious than the others on account of the large extent of jungle and uncultivated land. In many parts, the Sanitary Commissioner says, the inhabitants suffer from malarial cachexia to a marked degree, but he believes that, as the country gets more opened up by destruction of jungle and by cultivation, the fever death-rate will be lower.

Dysentery and diarrhoea accounted for 11,200 deaths, representing 3·9 per 1,000 of population, as compared with 22,007 or 7·7 in 1891. In every district there was a decrease in the mortality under this head. Ellichpur as usual recorded the highest district rate of 7·8 per 1,000, and in the other five districts the rates ranged from 5·4 in Akola to 1·1 in Wun.

IV.—JAILS.

The health of the jail population of India during 1892 was on the whole unsatisfactory. In the admission and constantly-sick rates there was a great increase as compared with the previous year, the former having risen from 979 to 1,117 per 1,000 of average strength, and the latter from 34 to 38 per 1,000; the death-rate also rose from 30·19 to 35·94. Of the ten provinces, all but Coorg returned a higher jail death-rate than in 1891, the most noticeable cases being the Central Provinces and Bengal. Cholera was present in some jails in all the provinces except Berar and Coorg, and accounted for 510 deaths, equal to a ratio of 5·32 per 1,000 of average strength against 324 or 3·48 in 1891. There were fewer deaths from fevers, but dysentery and diarrhoea showed an increased mortality.

Sickness and mortality in 1892.

The following statement shows the sickness and mortality among all classes of prisoners in the jails and subsidiary jails of the several provinces for 1892, as compared with the previous year:—

PROVINCES.	1892.			1891.		
	Ratio per 1,000 of Average Strength.			Ratio per 1,000 of Average Strength.		
	Admissions.	Daily Sick.	Deaths.	Admissions.	Daily Sick.	Deaths.
Bengal	1,179	40	43·78	1,170	38	30·97
North-Western Provinces and Oudh	931	41	29·14	781	34	27·62
Punjab	2,199	47	30·54	1,746	40	28·30
Burma	934	39	33·10	891	34	30·12
Central Provinces	945	31	44·66	792	28	30·37
Assam	1,913	55	58·97	1,742	63	52·11
Coorg	1,143	47	30·34	1,458	50	32·64
Madras	724	25	45·14	637	21	35·33
Bombay	787	29	36·52	676	25	32·44
Berar	575	16	17·16	440	13	11·29
INDIA	1,117	38	35·94	979	34	30·19

Sickness and mortality prevailed to a much greater extent in the Bengal jails during 1892 than in the previous year. The rate of admission into hospital rose from 1,170 to 1,179 per 1,000, the average sick-rate from 38 to 40, and the death-rate from 30·97 to 43·78. The chief causes for the increase were the general unhealthiness of the season, and want outside the jails. Among all classes of prisoners there were 752 deaths, or 259 more than in 1891, and of the total, 195 were due to bowel complaints, 100 to respiratory diseases, 68 to cholera, and 45 to fevers. The number of admissions from dysentery and diarrhoea was nearly 1,000 more than in 1891, and the ratio per 1,000 of average strength rose from 290·5 to 328·2. Of the total deaths, 683 occurred among convicts (including 112 released on medical grounds), representing a ratio of 43·1 per 1,000. It has been directed that all prisoners who are released on the ground that they are likely to die must be shown as deaths in the mortality statistics of the Jail Department. Excluding the moribund cases and three cases of death by accident, the number of prisoners who died in other than subsidiary jails was 551, and of these only 166 were received in good health while 207 were found to be in indifferent health, and 178 in bad health. Of the 46 jails in the province 22 returned a convict death-rate exceeding the provincial rate, and of these one recorded a mortality of over 200 per 1,000, and six of over 100, viz., Naya Dumka 221·1, Dinajpur 156·8, Singhbhum 135·9, Jalpaiguri 126·1, Birbhum 112·5, Bogra 109·0, and Rangpur 109·3. The majority of the deaths in these jails were of convicts who were received in bad or in indifferent health. In 11 other jails the convict mortality exceeded 50 per 1,000. In three of the 46 jails there were no deaths. Some of the more unhealthy jails were partially emptied so as to allow

prisoners admitted in bad health the benefit of a change of climate, the result being a remarkable improvement, "showing how much sickness is due to the bad climate of the districts they come from." It is reported that weak and sickly prisoners were more extensively employed during the year on gardening and other light work of similar nature, and that the great attention now paid by jail superintendents has resulted in a general improvement in the health of this class of prisoners, and has diminished the numbers in the special and convalescent gangs. Much attention appears to have been devoted during the year to the improvement of the water supply of the jails. Several important reforms in the matter of appliances were introduced with a view to prevent contamination in handling or carrying water.

North-
Western
Provinces
and Oudh.

The greater unhealthiness of the year 1892 in the North-Western Provinces and Oudh, as compared with 1891, affected the prisoners, though not so severely as the free population, for the jail death-rate was not excessive. The admissions into hospital per 1,000 of average strength rose from 781 to 931, the daily average sick from 34 to 41 per 1,000, and the death-rate from 27·62 to 29·14. The increased ratios were attributed mainly to the bad or indifferent health of the prisoners on admission into jail. The most fatal diseases were cholera with 42 deaths (1·52 per 1,000), dysentery and diarrhoea 177, and respiratory diseases 144. Cholera, although exceedingly prevalent throughout the provinces, was not so fatal in the jails as in the previous year, when the deaths from the disease numbered 95. Of the total 803 deaths, 737 occurred among convicts, yielding a ratio of 28·68, against 27·78 in 1891. This average death-rate was exceeded in 23 jails, the highest being 87·44 in Gorakhpur jail, which was chiefly due to the bad state of health of convicts entering the jail, and to an outbreak of cholera. Owing to the persistent high mortality in this jail a new one was being built, entirely by prison labour, on a fresh site. Banda jail followed with a mortality rate of 85·75, the bad state of health of prisoners on admission also being the principal cause, as less than 50 per cent. of the 732 admissions during the year were in good health. To the same cause was attributed the Ghazipur jail death-rate of 60·94. Two other jails (Aligarh and Saharanpur) recorded death-rates of over 50 per 1,000, seven of over 40, and 11 of over 30 per 1,000. Much good work was again executed during the year in improving the sanitary condition of the jails, in conformity in many cases with the recommendations of the Jail Committee.

Punjab.

The health of the jail population of the Punjab during 1892 was less satisfactory than in the previous year, but the death-rate compares favourably with that of the free population. There was overcrowding in 21 of the 33 jails, though in some it was trifling, the chief reason being the widespread prevalence of cholera, which prevented the transfer of prisoners. Admissions to hospital were in the ratio of 2,199 per 1,000 of average strength, against 1,746 in 1891, the daily average sick-rate rose from 40 to 47 per 1,000, and the death-rate from 28·30 to 30·54. "In comparing the figures of the two years," the Inspector-General of Jails states, "it is worthy of notice that during one of the unhealthiest years on record, while the death-rate of the free population took a bound from 29·13 to 49·48, an increase of 20·35 per 1,000, that of the prisoners rose only by 2·24 per 1,000 of average strength. It is therefore matter for congratulation that the jail population has suffered only to a comparatively slight extent, and it is also one reflecting no small credit on the officers to whom its welfare is entrusted. Much has been and is being done to improve the sanitary condition of our jails, but there is no influence affecting mortality among the prisoners stronger than the personal one exercised by a superintendent." In one jail (Dharmasala) there were no deaths, in six the mortality was less than 15 per 1,000, and in 15 others the provincial rate was exceeded, the ratios ranging from 75·56 in Karnal to 31·77 in Delhi. Among the convict class the death-rate was 30·73 per 1,000, as compared with 27·94 in the preceding year. From all the principal diseases there were more deaths than in 1891. Dysentery and diarrhoea accounted for 69, an increase of 18; respiratory diseases 155, or 34 more, of which 140 resulted from pneumonia, 70 having occurred in the first quarter of the year and 52 in the last. The excessive mortality of the first quarter was to some extent due to the prevalence of epidemic influenza in parts of the province, and the large number in the last quarter was in great measure the result of the deterioration of health consequent on the severe epidemic of autumnal fever. From cholera, which existed in an epidemic form throughout the province for a great part of the year, there were 29 deaths, an increase of 17 on the number recorded in 1891. Of

these, 12 occurred in the Lahore, and 10 in the Mooltan Central jails. In both instances the prisoners were moved into camp; they returned to jail in September, and remained free from further attack. Of the jails showing an improvement in the health of the convicts, the most noteworthy is that of Umballa, the death-rate of which fell from 48·85 to 14·19, and was ascribed by the superintendent to the remedying of defects in the water-supply, and to boiling the drinking water. The reduction in the death-rate of the Dharmasala jail from 9·90 to *nil*, of the Chenawan Central jail from 30·37 to 8·22, of the Sialkot jail from 41·92 to 21·32, and of the Gujranwala jail from 51·28 to 12·11, were also greatly due to the care bestowed by the superintendents on matters affecting the health of the prisoners.

In Burma the health of the prisoners was not satisfactory, the rates of admissions into hospital, daily average sick, and deaths being 934, 39, and 33·10 per 1,000 respectively, as compared with 891, 34, and 30·12 in 1891. The increase was entirely due to cholera, the deaths from which rose from 52 to 107. The disease appeared in 12 of the 31 jails, and in eight of them it was more or less epidemic; while in each of the jails at Akyab and Myingyan there were two distinct epidemics, resulting in 16 deaths at the former and 25 at the latter. Cholera was also severely felt at the jails of Toungoo, Magwe, and Moulmein, which respectively contributed 24, 12, and 11 fatal cases. The removal of prisoners into camp was attended with satisfactory results. Exclusive of cholera the provincial jail death-rate was only 24 per 1,000, against 25·58 in 1891. From the other chief diseases, viz., respiratory diseases, fevers, and dysentery and diarrhoea, the mortality was less than in the previous year, especially the last-named, from which the deaths decreased by 15, the number being 71 against 86. In 13 jails not a single death was recorded under dysentery and diarrhoea. Of the total 392 deaths all but 17 occurred among the convict class, representing a ratio of 32·92 per 1,000, against 30·10 in 1891. In four of the 31 jails there were no deaths, and in 13 the provincial average was exceeded, in some of the smaller jails very considerably. Of the seven central prisons the highest death-rates were returned by Moulmein (50·97) and Myingyan (53·43). It appears that the sanitary condition of the Moulmein jail has been made the subject of special correspondence, and it may have to be converted into a district jail if the health of the prisoners does not improve. The accommodation for prisoners was considerably increased during the year by the occupation of three new jails and the expansion of certain district jails. Before the new jails were opened in July there was much overcrowding but from that date it practically ceased. In several cases the overcrowding was due to cholera which forbade transfers to other jails.

The health of the jail population of Assam during 1892 was again very unsatisfactory. The admissions into hospital among all classes of prisoners were in the ratio of 1,913 per 1,000 of average strength against 1,742 in 1890, the daily sick rate was 55 per 1,000 against 68, and the death-rate 58·97 against 52·11. The number of deaths was really less than in 1891, being 76 against 84; the average strength, however, of the jails was smaller, which accounts for the higher death-rate of the year under notice. The increased mortality was chiefly due to the large number of deaths in the Gauhati, Nowgong, and Dibrugarh jails. The Chief Commissioner during his tour inspected these three jails, and made full inquiry into the cause of the heavy mortality; he was satisfied that it had nothing to do with any defects in the sanitary condition of the jails. The causes assigned by him were the large number of anæmic coolies (punished for desertion) admitted into the Dibrugarh jail, the prevalence of *kala-azar* in the town and district of Nowgong, and the stoppage of the water-supply at Gauhati. Special instructions were given by the Chief Commissioner regarding the Gauhati jail, which if attended to, he believed, would result in a considerable decrease in the death-rate in future years. Of the total 76 deaths, the three jails above-mentioned contributed 42, viz., Gauhati 25, equal to 130·36 per 1,000 of average strength, Nowgong 8 or 119·58, and Dibrugarh 9 or 144·0. It is satisfactory to notice that in Sylhet jail, which is the largest of the province, there were only 10 deaths against 28 in the previous year. But then there were no special causes at work as in 1891. The deaths in this jail, however, give the high ratio of over 69 per 1,000. Cholera accounted for 12 of the total deaths, against 13 in 1891, and of these Gauhati jail recorded 11; from dysentery and diarrhoea there were 26 deaths, against 38, and from respiratory diseases 12, against seven. All the 76 deaths but three occurred among convicts, yielding a ratio of 61·46 as compared with 54·29 in 1891.

Central
Provinces.

The health statistics of the jails in the Central Provinces for 1892 show a large increase of sickness among the prisoners as compared with the results of the previous year, and also a much higher mortality. The ratio of admissions into hospital rose from 792 to 945 per 1,000 of average strength, the daily average sick rate from 28 to 31, and the death-rate from 30.37 to 44.66. The general unhealthiness of the year and the condition in which the prisoners were consequently received into jail, in the opinion of the officiating Inspector of Jails, were the main reasons for these unsatisfactory results. The total number of deaths rose from 142 to 212, and of these 112 occurred among convicts alone in the three gaols of the Chhattisgarh division, viz., 53 in the Sambalpur jail, 26 in Bilaspur, and 33 in Raipur. All three suffered from an outbreak of cholera, especially Sambalpur. The disease was exceedingly virulent in the division, and it was thought probable that the prisoners admitted into these jails brought it with them. The highest jail death-rate was recorded by Sambalpur, its ratio of 309.4 per 1,000 which was more than five times higher than 1891 (58.4), Bilaspur came next with 222.7 against 53.3, Damoh followed with 75.6 against 146.6, and Saugor with 64.9 against 55.8. In the remaining jails the death-rates ranged from 49.3 per 1,000 in Mandla to 9.0 in Chanda. The Sambalpur and Bilaspur jails are reported to be ill-constructed and confined, and plans for their enlargement and improvement were under the consideration of the Public Works Department. All the 212 deaths but eight occurred among the convict class, the rate per 1,000 of average strength being 45.5 against 30.7 in 1891. During the year experiments were made in one or two jails to test the effect of moderate labour upon the health of weakly prisoners, when it was found that the prisoners as a rule gained in weight.

Madras.

The health of the jails in the Madras Presidency during 1892 was most unsatisfactory, and the death-rate was the highest recorded for 10 years. The ratio of admissions to hospital rose from 637 per 1,000 of average strength in 1891 to 724, the average daily sick rate from 21 to 25 per 1,000, and the death-rate from 35.33 to 45.14. This heavy mortality was largely due to the prevalence of cholera from which there were 192 deaths, equal to 39 per cent. of the total. Deducting these the general death-rate is reduced to 27.94. But the presence of cholera in the jails is not to be wondered at seeing that the disease was very fatal throughout the Presidency in 1891 and 1892. "It will be remembered, moreover," the Inspector General of Jails writes, "that from the commencement of the year under report, and indeed from an earlier date, distress was experienced throughout a great part of the Presidency, and relief works and famine kitchens were open from 1st January until the middle of September. The existence of scarcity and the high prices of grain filled the jails with prisoners who had undergone a more or less prolonged period of privation outside, and whose health on admission was bad or indifferent." And he draws attention to the fact that out of 476 deaths in district and central jails among convicts 46.7 per cent. occurred among those who had been less than six months in jail. From dysentery and diarrhoea also there was a much higher mortality in the Madras jails than in 1891, the deaths having increased from 90 to 141, equal to 28 per cent. of the total deaths. It will be seen therefore that cholera and dysentery and diarrhoea accounted for nearly three-fourths of the year's mortality. The death-rates of the several jails ranged from 3.75 in Cuddalore to 123.57 in Berhampore. The high mortality of Berhampore was closely followed by Coimbatore with 118.40; Rajahmundry came next with a rate of 99.12, Cannanore with 84.46, and the jails of Vizagapatam, Cuddapah, Salem, and Trichinopoly, with rates of 65.01, 59.63, 50.76, and 50.30 respectively; next came Mangalore with a mortality rate of 40.05 and the Penitentiary with 38.44, the remaining rates were under 30 per 1,000. In 14 jails out of the 26 the mortality was in excess of that of the previous year, the most noticeable cases being those of Berhampore where the rate rose from 20.43 to 123.57, and of Coimbatore from 33.24 to 118.40.

Bombay.

Among the prison population of the Bombay Presidency the amount of sickness and mortality in 1892 was considerably greater than in the previous year. The admissions to hospital per 1,000 of average strength rose from 676 to 787, the daily sick rate from 25 to 29, and the death-rate from 32.44 to 36.52. The increase in the number of deaths from 253 to 293 was largely due to an epidemic of pneumonia at Shikarpur, where 39 of its total mortality of 67 resulted from this disease. All but nine of these 39 deaths occurred in the cold month of January, and in one day alone five prisoners were carried off by the disease. The death-rate of this jail during the year under notice was 121.6 against 57.4 in 1891. It appears that owing to the poor

condition and physique of many of the prisoners in this jail in the previous year, a number of whom showed signs of scurvy, extra precautions for the maintenance of their health were taken in the matter of warmth and extra clothing; but with the advent of 1892 the jail hospital commenced to rapidly fill up, and before the first month was over nearly 6 per cent. of the entire jail population had succumbed to pneumonia. For some years previous the Shikarpur jail had borne an evil name by reason of its high rate of mortality, its average for 15 years reaching 67·5 per 1,000. The Inspector-General suggested abandoning the building and establishing a district jail at Sukkur. Proposals on the subject are under the consideration of the Bombay Government in connexion with the general question of the proposed removal of the head-quarters of the district to Sukkur which was engaging their attention. In the remaining jails the death-rate was highest at Kaira (70·4 per 1,000), mainly due to the generally unhealthy condition of that part of Gujarat consequent on an excessively heavy rainfall. Other jails with death-rates exceeding the provincial rate were Nara 64·1, Karachi 52·3, Hyderabad 46·6, Nasik 45·5, Thana 41·3, and Surat 38·7. Of the total 293 deaths 264 occurred among the convict class, representing a ratio of 36·5 per 1,000 of average strength against 33·7 in 1891.

The general health of the prisoners in all the jails of Berar during 1892 was satisfactory. There was complete immunity from cholera, though the disease prevailed in most of the stations in which the jails are situated. The ratio of admissions to hospital was 575 per 1,000 of average strength against 440 in 1891, the daily sick rate 16 or 3 per 1,000 more, and the death-rate 17·16 against 11·29. The total number of deaths was 21; of these 16 occurred in the Akola jail, four having resulted from wounds received by convicts in the quelling of an outbreak among life prisoners. This incident and other matters have, it is stated, led to a fresh consideration of the question of establishing one central jail for the whole province at Amraoti, and the Resident was awaiting the submission of a detailed scheme. Berar.

V.—VACCINATION.

General
results.

During 1892-93 there were 6,396,480 persons successfully vaccinated in the several provinces of India, being an increase of 513,797 on the number of the previous year. According to age, $2\frac{1}{2}$ millions of the total were children under one year of age, and about 3 millions were children between the ages of one and six years. The proportion of population protected against small-pox by the year's operations ranged from 63·80 in Coorg to 20·34 in the North-Western Provinces, and 23·32 in Burma. In the vaccination of infants the best results were, as usual, obtained in Berar, where 66·4 per cent. of the children born during the year (estimated at 40 per 1,000 of population) were protected. Bombay Presidency came next with a percentage of 56·0, followed by the Central Provinces with 53·5, and the Punjab with 50·5. Of the remaining provinces, only in the North-Western Provinces and Oudh did the successful cases among infants equal 20 per cent. of the estimated births.

Statement showing the total number of persons successfully vaccinated during the year 1892-93:—

Province.	Population among whom Vaccination was carried on (Census of 1891).	Number of Persons successfully vaccinated.	Ratio of successful Vaccinations per 1,000 of Population.	Number of Children successfully vaccinated.		Percentage of Children born during the Year (calculated at 40 per 1,000 of Population) successfully vaccinated.
				Under One Year of Age.	Between One and Six Years of Age.	
Bengal - - -	70,253,264	1,812,257	24·52	319,716	1,289,712	11·4
North-Western Provinces and Oudh.	47,146,327	959,128	20·34	424,016	452,993	22·5
Punjab - - -	20,553,982	684,925	33·25	415,576	116,923	50·5
Central Provinces - - -	12,141,731	432,431	34·25	259,632	114,549	53·5
Berar - - -	2,897,040	107,251	37·0	76,986	18,041	66·4
Burma - - -	8,114,513	189,293	23·32	45,505	88,535	14·0
Assam - - -	5,634,258	199,739	31·51	41,920	114,813	18·6
Madras Presidency - - -	35,830,282	1,094,707	28·7	259,459	569,220	18·1
Bombay Presidency - - -	29,374,621	905,312	30·71	658,004	199,533	56·0
Coorg - - -	173,055	11,437	63·80	1,026	4,545	14·8
Total - - -	232,119,073	6,396,480	27·55	2,501,840	2,968,864	26·9

Bengal.

A radical change was effected during 1892-3 in the administration of vaccination in Bengal. Civil Surgeons are now held responsible for the protection of their districts, and they use their own discretion as to the number of vaccinators it is necessary to employ. Under this new scheme the total number of inspecting officers was increased from 159 in 1891-92 to 259, and of vaccinators from 2,738 to 3,045. Amongst them they performed 1,836,411 operations, of which 1,812,257 were successful, against corresponding figures in 1891-92 of 1,641,088 and 1,614,501. The primary operations numbered 1,820,799, of which 99·32 were successful. According to age, 319,716 of the successful primary vaccinations were of children under one year of age, and 1,289,712 were between one and six years. For the whole province the successful vaccinations were in the proportion of 24·52 per 1,000 of the population. Vaccination is now practised throughout the province, it is compulsory in municipalities, but optional in rural areas, except in certain portions of Rangpur, Bhagalpur, the Sonthal Parganas, and Tippera. The Sanitary Commissioner has recommended its introduction into these areas in accordance with the Act of 1880, but the Lieutenant-Governor hesitates to force upon the people a measure the importance of which they do not recognise, and to which in many districts ancient prejudice renders them hostile. The attitude of the people towards vaccination is described as one of passive acceptance, "but in nearly every district there are sections of the community who openly or covertly refuse to submit to it, objecting not so much to vaccination in itself as to the use of human vaccinifers, who are usually of low caste, and to the payment of vaccination fees." Lymph was obtained during the year from the Calcutta and Darjeeling depôts; the former has been in existence since 1882, but the latter, although established in 1891, was not in effective working till the end of the following year.

The system of preserving lymph by an admixture of lanoline was successfully continued throughout the year, and it can now be prepared so as to remain active for long periods and under various changes of temperature. One of the main objects of the establishment of these depôts has thus been successfully achieved, but without the establishment of several more depôts, at an enormous expenditure, it is impossible to attain the further object of supplying sufficient quantities of animal lymph to enable arm-to-arm vaccination to be entirely abandoned. The introduction of a scheme practised in the Punjab and Central Provinces has, however, been sanctioned as a tentative measure in 12 districts, by which a calf is first inoculated with lanoline lymph, and from this calf all the children of the village, as well as the calves from neighbouring villages, are vaccinated. After operation these calves are returned to their own villages, and when the lymph is ripe vaccination is carried on from them. The operation causes the animals little pain and no permanent injury, and as buffalo calves serve as well as cow calves it is easy to avoid wounding any susceptibilities.

Satisfactory progress was made in vaccination work in the North-Western Provinces and Oudh during 1892-93. The total number of persons vaccinated rose from 1,059,981 to 1,112,117, and the successfully vaccinated from 900,731 to 959,128. The proportion of persons protected by vaccination is, however, still very small, the ratio for the year being only 20·34 per 1,000, which is the smallest ratio attained in any province in India. Primary vaccinations numbered 1,087,755 of which 92·43 per cent. were successful, showing a slight increase on 91·66, the percentage of success in the previous year. Of the 945,364 successful primary cases, 424,016 were infants and 452,993 were children over one and under six years of age, both figures showing a satisfactory improvement as compared with the numbers of the previous year, which were 378,512 and 432,777 respectively. The proportion of persons successfully vaccinated varied very considerably in the different districts. Excluding the hill districts, the ratios per 1,000 of population ranged from 9·96 in Gonda to 30·46 in Muttra. As usual the lowest were recorded in Oudh, but it is satisfactory to learn that the returns of the year show a considerable advance in vaccination in that province, the ratios of five districts being above the average of the United Provinces. Vaccination is carried on in the provinces mostly by animal lymph. In the first circle, however, consisting of 13 districts out of a total of 49, there are no animal lymph depôts. There being little prejudice against vaccination in this circle, arm-to-arm vaccination is adopted with satisfactory results. In the second and third circles calf lymph is used to a certain extent, but the Sanitary Commissioner considers the arm-to-arm system the safest and most effective in India. "There is reason to believe," he says, "that the extension of the use of preserved lymph, as opposed " to fresh lymph derived in the arm-to-arm system, would lessen the amount of " protection against small-pox which is at present afforded by vaccination."

Vaccination work in the Punjab during 1892-93 continued to be on the whole satisfactorily performed. The previous year's results showed a decrease of 37,442 operations which was due to an order forbidding the practice of unnecessary and repeated re-vaccinations. Notwithstanding, in the year under notice, the re-vaccinations rose to 254,958, an increase of 62,862 on the number of 1891-92. On the other hand the primary cases declined from 620,604 to 571,523, which is stated to have been due chiefly to the unhealthiness of the year, and partly to the failure of the lymph supply and the carelessness of some of the vaccinators. Altogether there were 826,481 operations performed, showing an increase of 13,781 cases as compared with the results of the previous year. Of the primary cases, 545,477 or 95·44 per cent. were successful, and of these 415,576 were children under one year of age, representing 50·5 per cent. of the births calculated at 40 per 1,000 of the population. The results of inspection testified to this rate of success, for out of 13,980 cases of children inspected by the Sanitary Commissioner, 95 per cent. were found to be efficiently vaccinated. The provincial ratio of persons successfully vaccinated per 1,000 of the total population was 33·25, a ratio almost identical with that of 1891-92. Progress continued to be made in vaccination work with animal lymph. During the year 93 per cent. of the total vaccinations were performed with this kind of lymph, against 86 per cent. in 1891-92. In 24 out of the 31 districts vaccination work was almost entirely carried on with buffalo lymph; in the remaining seven districts the prejudices against the use of it have not yet been entirely overcome. It is stated that even in the strongly conservative Hindu Hili States some of the rajas and ranas have themselves been vaccinated with animal lymph, and their example has been followed by Rajputs and Brahmans.

Burma.

The total number of vaccinations performed in Lower Burma during 1892-93 was 156,946, being 26,508 more than in the previous year. The increase was widely distributed, for only in five out of the 18 districts were the operations fewer than in 1891-92. With an increase in the amount of work there has also been an improvement in the quality, though the average percentage of success was still much lower than in other provinces. Of the 117,988 primary cases, 86·65 per cent. were successful, against a corresponding ratio of 85·15 in 1891-92. The protection of children still remains very backward, and is a matter, the Government of India point out, for regret, especially in the case of Pegu, where there has been a considerable falling-off in vaccinations for the past two years, and where small-pox is said to be practically endemic. Out of the total 102,199 successful primary vaccinations only 26,521 were of infants, representing 14·2 per 1,000 of the births estimated at 40 per 1,000 of population. In four districts the proportion of successful vaccinations of children under one year old was less than 10 per cent. of the number of infants living. The Vaccination Act was extended in the course of the year to the Pegu Municipality in Lower Burma, and to the Pakokku, Taungdwingyi, and Monywa Municipalities in Upper Burma. At the close of the year the Act was in force in all the large municipalities of the province, and in most of the smaller ones.

In Upper Burma 80,155 persons were vaccinated during 1892-93, being an increase of 18,701 on the number of the previous year. All districts contributed to the increase except four. The percentage of success in primary cases was 86·08, against 85·35 in 1891-92. Out of the 65,633 successful primary cases, 18,984 were infants and 34,581 were children from one to six years of age. Estimating the births at 40 per 1,000 of population only 13·7 per cent. were successfully vaccinated in 1892-93. In the province of Burma as a whole the ratio of successful vaccinations per 1,000 of population was only 23·32, being the lowest of all the provinces except the North-Western Provinces and Oudh. The attitude of the people towards vaccination, the Sanitary Commissioner says, is generally antagonistic, and the work of the vaccination staff is too frequently a hopeless struggle against ignorance and prejudice. In some places work is greatly interfered with through the popularity of inoculators. It was suggested that the practice of inoculation should be punished criminally; but the Chief Commissioner considered it more expedient to destroy the alleged popularity of the inoculators in rural areas by steadily pushing vaccination, and satisfying the people of its efficacy, than to treat them as offenders against the criminal law, and he recommended that the plan of instructing inoculators in the method of vaccination and employing them as vaccinators should be persevered in.

Assam.

Progress continued to be made in vaccination work in Assam during 1892-93. The total number of operations performed was 224,943 against 206,331 in 1891-92, showing an increase of 18,612, which was contributed to by eight out of the total 13 districts. The increase was chiefly noticeable in Kamrup, where 25,273 people were vaccinated as compared with 11,916 in the previous year, and in Sylhet, which showed an increase of 7,897. In both cases the improvement was due to the energy shown by the Civil Surgeons and the civil authorities concerned. There was also a satisfactory increase in the tea gardens. On the other hand the Naga Hills showed the large decrease of 7,165, which is explained in some measure by the fact that the figures for 1891-92 were altogether exceptional owing to a very extensive outbreak of small-pox which caused the people to flock to the dispensaries and vaccination centres for protection against the disease. The primary vaccinations numbered 214,096, and of these 199,072, or 93 per cent., were successful. Exclusive of tea gardens, full returns of which are not given, but including dispensary work, 41,920 of the 190,694 successful primary cases were children under one year old, and 114,813 were between the ages of one and six years. The Compulsory Vaccination Act has been extended to nine municipalities, but it does not appear to be enforced with much strictness, as in some places a very small proportion of the population was vaccinated. In the province as a whole, however, the proportion of people protected by vaccination was greater than in any year since 1877, the ratio being 31·51 against 29·93 in 1891. The vaccine dépôt at Shillong is reported to have worked well, and the experience gained during the year has confirmed the superiority of glycerine over lanoline paste.

Central Provinces.

The year's vaccination work in the Central Provinces shows a decrease of 9,400 in the number of operations as compared with the results of 1891-92, the total having declined from 463,246 to 453,846. The decrease to some extent was due to the introduction of the new system of animal vaccination, though opposition to it in some

districts is reported to be rapidly disappearing as experience is gained of the convenience attending it. The decrease was distributed over 10 out of the 18 districts of the province, and was most marked in Sambalpur, which showed a diminution of 2,234 operations. Of the 453,846 people vaccinated 410,891 were primary cases, and of these 96·68 per cent. were successful. In the vaccination of children the results show a steady increase from year to year. In the year under notice 259,632 infants were protected, being in the ratio of 53·5 per cent. of children born, estimating the births at 40 per 1,000 of population. Of children between one and six years old 114,549 were vaccinated. The proportion of persons protected by vaccination in the province was 34·25 per 1,000 of population against 35·55 in 1891-92. The Vaccination Act was extended during 1892-93 to the municipalities of Nagpur, Narsinghpur, Harda, Sambalpur, Damoh, and Hatta, and other towns were following their example.

In the Madras Presidency there was an increase of 111,121 in the total vaccinations Madras. as compared with the operations of the previous year, the number having increased from 1,053,420 in 1891-92 to 1,164,541 in 1892-93, the increase being largely due to the introduction of animal vaccination. There is still, however, much room for improvement, as shown by the facts that only 29 per 1,000 of the population are protected from small-pox, and that small-pox was more prevalent in the year under notice than in any of the preceding seven years. The number of persons primarily vaccinated was 1,106,517, and of these 95·2 per cent. were successful cases. A considerable advance was made in infantile vaccination, the number successfully vaccinated under one year of age (259,459) exceeding the figure of the previous year by 48,807. Excellent results were achieved in the districts of Coimbatore, Madura, North Arcot, South Arcot, South Canara, Tinnevely, Trichinopoly, and Vizagapatam, where the increase in successful primary cases ranged from 17,313 to 6,270. At the close of the year vaccination was compulsory in all the municipal towns except Bimlipatam, Cochin, Karur, and Tanjore. Vaccination from animal lymph was conducted in all districts and in all municipalities except Srirangam, and the number of operations performed with it reached 884,525 against 674,148 in 1891-92, the percentage of success being 96 against 94. It is reported that the best results were obtained with fresh animal lymph, next with glycerine paste, and lastly with preserved animal lymph, the percentages of success being 97·3, 96·4, and 95·1 respectively. The reorganisation of the department was under the consideration of the Government at the close of the year.

The number of people vaccinated in the Bombay Presidency during 1892-93 showed Bombay. a decline of 11,307, the total being 986,758 against 998,065 in the previous year. The decrease was most marked in primary vaccinations, the number of which fell from 935,099 to 924,165, a diminution of 10,934. The percentage of success in primary vaccination was 94·99 against 94·56 in 1891-92. The falling off is attributed to the prevalence of fever and cholera, and to scarcity. The number of infants successfully vaccinated was 658,004, and of children between one and six years 199,533. Reckoning the births at 40 per 1,000 of population 56 per cent. of the children born during the year were protected from small-pox. The substitution of animal for human lymph in vaccination continued to increase in the larger towns of the Presidency. Animal lymph was also used in a number of villages in the Poona and Ahmednagar districts. "There is no doubt," the Sanitary Commissioner states, "that keeping up fresh lymph by arm to arm vaccination is becoming difficult, especially in large towns, owing to the refusal of parents to allow the lymph to be extracted from the ripe vesicles; there is not nearly so much objection to the operation for inserting the fresh lymph." During the year a compulsory Vaccination Act was passed, but the question as to what areas to apply it was still under consideration. The recorded results of the work of the supervising staff show a falling off compared with those of the previous year, the percentage of persons operated upon who were inspected being 34·19 against 38·63 in 1891-92.

The results of vaccination work in Berar during 1892-93 show an increase of 17,026 Berar. operations, the total number for the year being 145,882 against 128,856 in 1891-92. The excess, however, was mostly under re-vaccinations, which showed an increase of 13,655. Primary cases numbered 101,774, and of these 94·7 per cent. were successful, which is a trifle lower than the ratio of 95·1 in the previous year. Of the ages of those successfully vaccinated 76,986 were infants under one year of age and 18,041 were children between one and six years. The rate of infantile protection, estimating

the births of the year at 40 per 1,000 of population was 66·4, the highest of all the provinces. As regards the efficacy of vaccination the Sanitary Commissioner furnishes statistics showing that for successive quinquennial periods for the last 25 years the death-rate from small-pox has varied inversely as the ratio of successful vaccinations. For the first quinquennium the death-rate was 2·02 per 1,000 of population and the ratio of successful vaccinations was 8·92. For the last period the death-rate had fallen to 0·2 per 1,000, and the ratio of successful vaccination had risen to 35·8. There is little or no opposition to primary vaccination in any part of the province. What little there is, it is stated, is mostly in the municipal towns among the Marwaris and Muhammadans. The Compulsory Vaccination Act was made applicable to all the municipal towns in October of the year under notice, and rules framed under the Act had been circulated to the municipalities concerned for information and opinion.

VI.—MEDICAL INSTITUTIONS.

Civil Hospitals and Dispensaries.

The following comparative statement shows the number of hospitals and dispensaries open in the several provinces of India during 1892 and the previous year, and the number of patients under treatment :—

Provinces, &c.		Number of Institutions.	Number of In-door Patients.	Number of Out-door Patients.	Total Number of Patients.
Bengal - - -	- { 1892 1891	299 272	37,845 35,859	1,575,926 1,460,195	1,613,771 1,496,054
Calcutta and Howrah - -	- { 1892 1891	11 11	25,211 25,318	226,772 219,818	251,983 245,136
North-Western Provinces and Oudh	- { 1892 1891	315 299	56,226 54,372	3,376,125 3,012,662	3,432,351 3,067,034
Punjab - - -	- { 1892 1891	232 228	53,425 49,700	2,937,314 2,541,753	2,990,739 2,591,453
Burma - - -	- { 1892 1891	82 80	29,716 28,603	427,813 392,190	457,529 420,793
Central Provinces - - -	- { 1892 1891	110 111	8,523 8,222	963,904 904,654	972,427 912,876
Assam - - -	- { 1892 1891	81 74	5,734 4,455	364,098 322,391	369,832 326,846
Coorg - - -	- { 1892 1891	5 4	1,292 858	25,752 22,327	27,044 23,185
Madras - - -	- { 1892 1891	449 432	52,926 51,441	3,142,732 2,775,838	3,195,658 2,827,279
Bombay - - -	- { 1892 1891	269 254	46,791 43,936	1,946,906 1,798,294	1,993,699 1,842,230
Berar - - -	- { 1892 1891	44 44	3,858 3,537	292,233 279,214	296,091 282,751
Total - - -	- { 1892 1891	1,897 1,809	321,547 306,301	15,279,577 13,729,336	15,601,124 14,035,637

The returns of the charitable dispensaries in Bengal for 1892 show a further increase Bengal. both in the number of institutions and in the number of patients under treatment in them. The total number of dispensaries at work during 1892 in Bengal, exclusive of Calcutta, was 299, an increase of 27 on the number of the previous year. At these there were 1,613,771 patients under treatment, 37,845 being in-door and 1,575,926 out-door patients, against 35,859 and 1,460,195 respectively in the previous year. This shows a total increase of 117,717, which was attributed partly to the opening of new dispensaries and partly to the increasing popularity of the institutions. Besides the 299 dispensaries 11 more had been established, but were not at work during the year under notice. But even this number is far too small to meet the requirements of the large population of the province. Considering, however, that each institution can only serve the people living within easy reach of it, it is satisfactory, the Inspector-General writes, that so large a number as $2\frac{1}{4}$ per cent. of the population obtained gratuitous medical aid in 1892. There was a satisfactory increase in the number both of women and children, but the number of males was nearly four times that of females. "Nothing more definitely points," the Inspector-General remarks, "to the necessity for the entire separation of the male and female departments of dispensaries than these figures do, and the extension of the Lady Dufferin scheme will affect this." The year 1892 was exceptionally unhealthy, and this was indicated by an increase of patients from

nearly all the chief diseases, especially from cholera and dysentery. Cases of venereal diseases rose from 39,053 in 1891 to 42,734. Among the in-door patients there were 5,107 deaths, being in the ratio of 134·9 per 1,000 of total treated, against a death-rate of 133·1 per 1,000 in 1891. The high death-rate is said to be due to the unavoidable admission of a large number of patients in a hopelessly advanced stage of disease. Great attention is paid in these institutions to surgery, and during the year 9,263 major operations were performed against 8,365 in 1891; of these 173 terminated fatally. Operations for cataract also increased from 2,284 to 2,333, and of these more than 81 per cent. proved successful. Medical officers and their subordinates were taking a greater interest in this important branch of their profession. Much, however, remains to be done as the figures are yet very small when compared with the returns of the other great provinces of Upper India, and the Inspector-General hoped that Civil Surgeons and subordinate medical officers would exhibit still greater interest in the matter.

The following statement shows the number of in-door and out-door patients treated in the several hospitals and dispensaries in Calcutta during 1892 and the previous year:—

NAME OF INSTITUTIONS.	1892.				1891.			
	In-door Patients.	Out-door Patients.	Total Number of Patients.	Died per 1,000 of In-door Patients treated.	In-door Patients.	Out-door Patients.	Total Number of Patients.	Died per 1,000 of In-door Patients treated.
Medical College Hospital	7,054	54,660	61,714	114·1	6,803	50,227	63,030	100·7
Presidency General Hospital	3,498	—	3,498	34·3	2,928	—	2,928	43·3
Campbell Hospital	8,551	11,470	20,021	197·2	9,088	—	9,088	188·2
Police Hospital	2,045	—	2,045	9·7	2,468	—	2,468	9·7
Mayo Native Hospital	1,756	27,508	29,264	129·7	1,884	28,700	30,584	156·5
Chandney Hospital	421	44,947	45,368	23·7	391	42,998	43,389	25·5
Park Street Dispensary	—	28,847	28,847	—	—	29,901	29,901	—
Chitpore Dispensary	—	20,621	20,621	—	—	22,262	22,262	—
Suker's Street Dispensary	—	18,485	18,485	—	—	18,589	18,589	—
Bhawanipur Dispensary	—	9,737	9,737	—	—	10,884	10,884	—
Total Calcutta Hospitals and Dispensaries	23,325	216,275	239,600	123·2	23,562	209,561	233,123	131·5
Howrah General Hospital	1,896	10,497	12,393	176·0	1,766	10,257	12,013	211·2
GRAND TOTAL	25,211	226,772	251,983	127·2	25,318	219,818	245,136	127·8

It will be seen that there was an increase of 6,954 in out-door patients and a slight falling off of 107 in in-door patients. The death-rate among the in-patients was 127·2 per 1,000, being practically the same as in 1891. Cholera patients declined from 761 to 709, and the fatal cases from 455 to 425. Small-pox cases rose from 21 to 35, most of which were treated in the Campbell Hospital. Dysentery and diarrhoea were also less prevalent than in the previous year, and the number of cases of malarial fever among the house patients was 3,799 against 4,235. The total number of in and out patients treated for venereal affections rose from 11,886 in 1891 to 13,072. There were 3,403 important surgical operations performed against 2,221 in 1891, and of these 134 terminated fatally being in the ratio of 37·8 per 1,000, against a ratio of 45 in 1891.

Punjab.

Six new dispensaries were opened in the Punjab during 1892, and two dispensaries were closed, leaving the total number of charitable institutions at work in that year at 232. At these, 2,990,739 patients were under treatment, being an increase of 399,286 on the number of 1891. The increased attendance was general in all the districts except Gurgaon, Delhi, Kangra, and Sialkot, and was due to the extreme unhealthiness of the year. Calculated on the approximate population of the province, the number of patients yielded a percentage of 14·34. Of the diseases for which patients sought relief there were 11,321 cases of cholera, being an increase of 7,333 over 1891. Special arrangements were made in each district for the treatment of cholera cases, but the number of such patients who attended at the dispensaries represented a very small proportion of those attacked. Cases of malarial fever rose from 421,677 to 700,784. Diseases of the eye showed an increase of 16,786 cases over 1891, the number treated in 1892 being 267,565. Among the in-patients there were 3,209 deaths during the year, being in the ratio of 60·1 per 1,000 of average strength against a death-rate of 53·9 in 1891. In surgical work there was an increase in minor operations from 185,120 to 186,702, and in those of a major kind from 13,736 to 14,660. Including those remaining from the previous year, the latter numbered 14,998. Among these there were 4,440 cases of cataract, including 146 remaining under treatment from the previous year, of which 82·43 per cent. resulted in cure.

During 1892 there were 16 new dispensaries opened in the North-Western Provinces and Oudh, bringing the total at the end of the year up to 315. Statistics, however, were furnished for only 289, at which the total number of patients who received medical aid was 3,432,351 against 3,067,034 in the previous year. Of these 693,502 were women and 839,065 were children, both showing a marked increase on the figures of the previous year, which were 625,456 and 750,832 respectively. The in-door patients numbered 56,226, as compared with 54,372 in 1891, and among them there were 3,094 deaths, giving a death-rate of 55.0 per 1,000 against 3,357 or 61.7 in the previous year. Of the diseases for which the patients were treated 667,567 were suffering from malarial fevers, an increase of 136,403 on the number of 1891; of cases of cholera there were 9,075 against 8,502, and cases of diseases of the eye also increased from 241,942 to 269,004. The progress of surgical work kept pace with the general increase in the number of patients applying for relief. The number of surgical cases rose from 154,963 to 166,338. These included 25,244 major operations (with 943 remaining from the previous year), of which 19,465 resulted in cure and 370 were fatal. The new dispensaries accounted for 61,905 of the total increase of patients, leaving 303,412, or 9.8 per cent., to the credit of the growing popularity of the older dispensaries.

North-
Western
Provinces
and Oudh.

Two new dispensaries were established in Lower Burma during 1892, bringing the total up to 37. At these 298,846 patients attended, as compared with 279,974 in 1891. Indoor patients increased from 17,180 to 18,876, and of these 12,998 were cured and 1,420 or 75 per 1,000 died, against 1,248 deaths or 73 per 1,000, in the previous year. Malarial fevers alone were responsible for nearly one-fifth of the attendance, and next came cases of worms and eye diseases. The number of cholera patients was nearly double that of 1891, being 415 against 214. Surgical work also showed an increase both in major and minor operations, the former having risen from 337 to 418, and the latter from 7,618 to 7,970. The reason why the major operations are so much smaller in number in Burma as compared with the majority of Indian provinces is, Surgeon-Major Dalzell says, the people of Burma being a healthy, well nourished race, there is a paucity of subjects for operation.

Burma.

In Upper Burma 45 dispensaries were working during 1892, the same number as in the previous year. The total number of patients under treatment was 158,683, of whom 10,840 were in-patients, the corresponding figures for 1891 being 136,444 and 8,575 respectively. In the course of the year 8,912 patients were cured, 258 relieved, 336 discharged otherwise, and 569 died, the deaths yielding a ratio of 52 per 1,000, against 44 in 1891. The Burmese resort to these institutions in greater proportion in Upper than in Lower Burma, the percentage of Burmese to total treated being 51 for the lower part of the province against 59 in the upper part.

There were 110 hospitals and dispensaries at work in the Central Provinces during 1892, or one less than in the previous year; but the total number of patients rose from 912,876 to 972,427. The increase extended to both in and out door patients, the former having risen from 8,222 to 8,523, and the latter from 904,654 to 963,904. At several dispensaries useful work was done in making arrangements for the separate out-door treatment of the sexes, and where effected an increase in the attendance of female out-patients was the result. Among the in-patients there were 832 deaths or 97.6 per 1,000 of total treated, a lower rate by 21 per 1,000 than that of 1891. There were 24,378 surgical operations performed against 22,472 in 1891. Of these, 1,615 were major against 1331. Malarial fever cases were much more numerous than in 1891, and in several other groups of diseases there was a considerable increase. Cholera cases rose from 1,775 to 1,908, while dysentery cases declined from 19,763 to 15,480, and diarrhoea from 24,854 to 22,389, but the largest decrease took place in diseases of the eye, the cases having fallen from 98,479 to 94,127.

Central
Provinces.

In the province of Assam there were 81 dispensaries open during 1892, at which 369,832 patients were under treatment against 326,846 in the previous year. The in-patients numbered 5,734, as compared with 4,455 in 1891, and of these 2,755 were cured, 421 relieved, 1,153 discharged otherwise, and 1,160 died, the latter representing 202.3 per 1,000 of the total in-patients, against a ratio of 187.6 in 1891. Of the total number of persons who received medical aid, malarial fever, including kala-azar, accounted for 83,846 cases, or about a fourth of the total treated; next came skin diseases, with 72,743 cases, worms 37,901, and diseases of the digestive system 20,213. Cholera patients numbered 2,328. Of surgical cases there were 8,936, including 767 major operations; of the latter, 639 resulted in cure and 24 were fatal. At the request

Assam.

of the Chief Commissioner of the province an inquiry was made by the Sanitary Commissioner into the work done by the several Local Board dispensaries, with a view to its being determined whether Government aid, in the shape of granting them the services of a Hospital Assistant and European medicines free of charge, should be continued. In consequence of his recommendations the annual grant was discontinued in several cases, and the saving effected has been utilised in making grants to the newly opened dispensaries at the kala-azar centres in the Nowgong and Darrang districts.

Madras.

In accordance with instructions from the Government of India, the statistics of State hospitals in Madras Presidency town are now separately reported on. Excluding these there were 443 dispensaries at work in Madras during 1892, or 17 more than in 1891. The results of the year show that 3,106,386 patients were treated, against 2,743,419 in 1891. The in-patients increased from 37,243 to 39,741, and of these 23,914 were cured, 6,319 relieved, 4,458 discharged otherwise, and 3,714 died, the latter representing a ratio of 93·5 per 1,000 of the total. Of the principal diseases under treatment affections of the eye gave the largest number of admissions, yielding 12·01 per cent. of the total; ulcers and diseases of the skin followed with percentages of 11·06 and 9·64 respectively. Surgical operations amounted to 112,540, including 4,391 of a major kind, of which latter 3,557 were cured and 179 were fatal.

In the six institutions of Madras town there were 89,272 patients under treatment during 1892, against 83,860 in 1891. The increase was entirely among out-patients, the in-patients having declined from 14,198 to 13,185, which was chiefly attributable to the omission of 1,528 cases of natural labour, as, under the new nomenclature, such cases are no longer recognised as diseases. The admissions from malarial fever and eye diseases showed a large increase, while diarrhoea and dysentery cases decreased. Of the total in-patients 6,805 were cured, 2,727 relieved, 2,079 discharged otherwise, and 816 or 61·9 per 1,000 died. The results of surgical work showed an increase of 557 operations, the major kind having risen from 3,283 in 1891 to 3,498, and the minor from 8,228 to 8,570. The successful major operations numbered 2,396, and the fatal cases were 89.

At the Madras Voluntary Venereal Hospital, 577 patients were under treatment, an increase of 135 on the number of 1891. Of these 360 cases were of primary syphilis, or 93 more than in the previous year. Cases of gonorrhoea also showed an increase of 28. "The character of the cases," the Superintendent reports, "was very bad; in fact I have never seen such frightful results from syphilitic poison. Mere children and old women presented themselves in a shocking state, huge sloughing ulcers, with great loss of tissue, being common. No such cases were seen during the period the Contagious Diseases Act was in force; cases only come in now when disease is far advanced and the system thoroughly poisoned, and they can leave hospital when they please, many insisting on leaving before a cure is complete, these widely spreading a bad form of syphilis among the population."

Bombay.

Excluding the 11 civil medical institutions of the presidency town of Bombay, there were 258 hospitals and dispensaries working in the mofussil during 1892. At these 1,880,327 patients were under treatment, of whom 28,372 were in-door and 1,851,955 were out-door patients, as compared with 27,777 and 1,705,081 respectively in 1891. The season was generally unhealthy, and it was chiefly to this cause, though partly also to the opening of new institutions, that the general increase of patients was attributed. Cholera, as already stated, prevailed to an unusual extent in the Presidency, and the number of cases of the disease which came under treatment was 5,121, against 2,131 in 1891. Dysentery cases also rose from 25,396 to 32,173, and malarial fever admissions reached the enormous total of 381,837, being an increase of 70,574 on the number reported in the previous year. Of the in-door patients 20,768 were cured, 2,195 relieved, 2,380 discharged otherwise, and 1,809 died, giving a death-rate of 63 per 1,000 of total treated, or 6 per 1,000 more than in 1891. Excluding the 84 surgical cases which remained under treatment from the previous year, 3,835 major operations were performed during 1892, and of the total 3,115 were cured, 288 relieved, 69 discharged otherwise, and 128 proved fatal. The total number of minor operations was 85,494, against 77,882 in 1891.

At the 11 civil medical institutions working in the city of Bombay during 1892, there were 113,372 persons under treatment, of whom 18,419 were in-door patients. Of these 10,432 were cured, 4,301 relieved, 1,133 discharged otherwise, and 1,556 died, this mortality being at the rate of 84 per 1,000 of the total treated, as compared with 88 per 1,000 in 1891. As usual malarial fevers gave the largest number of admissions, 14,579 or 12·9 per cent. of the total treated, and venereal affections contributed

5,428 cases, or 4·8 per cent. Cholera cases declined from 74 to 18, and those of dysentery from 1,761 to 1,627, while cases of diarrhoea rose from 3,056 to 3,345. There were 24,019 minor and 2,429 major operations performed. Including 50 cases which had been operated on in the previous year, the total of the latter was 2,479, and of these 2,327 were cured, 30 relieved, 20 discharged otherwise, and 70 ended fatally.

The same 44 civil hospitals and dispensaries were open in Berar during 1892 as in the previous year. The total number of patients under treatment was 296,091 against 282,751 in 1891. Of these 3,858 were in-patients, of whom 3,367 were cured, and 151 died, which gives a death-rate of 39·1 per 1,000 as compared with a mortality of 202, or 58 per 1,000 in 1891. A large proportion of the deaths, however, were due to patients being brought in at the last stage, or about the last stage, of the disease they suffered from. Malarial fevers continued to head the list of diseases from which relief was sought, and showed a marked increase of cases over the preceding year; more than a fifth of the total patients were treated under this head; diseases of the eye and skin came next in order. Cholera cases declined from 2,295 in 1891 to 1,148; there was also a smaller number of admissions from bowel affections. Surgical work showed progress. The number of major operations performed was 397 against 242 in 1891, and of minor operations 10,890 against 9,971.

Lunatic Asylums.

At the five asylums in Bengal (viz., Calcutta, Dacca, Patna, Cuttack, and Berham-
pore) 1,149 lunatics, including 186 fresh admissions and re-admissions, were under treatment in 1892, being a decrease of 85 on the number of the previous year. In the course of the year under notice 71 patients were discharged as cured, and 43 otherwise, and 84 died. Compared with the figures of 1891, the admissions were fewer by 27, and the discharges and deaths together by 83. At the end of the year there were 951 persons still under detention, or 12 less than at the close of 1891. The health of the inmates of the asylums was again remarkably good, and the number of admissions to hospital declined from 717 in 1891 to 595. With the exception of six cases of small-pox in the Dacca Asylum, there was no special occurrence of serious disease. Notwithstanding that cholera prevailed severely during the year, there was no instance of the disease in any of the asylums. The total mortality showed an increase on the previous year, the death-rate being 87·4 per 1,000 of average strength against 80·2 in 1891. During the year the Government of India suggested that the practicability of establishing dairy farms in connexion with the Bengal Lunatic Asylums might be taken into consideration. It appears that at Dallanda a dairy farm has been in successful operation since 1889, and steps were being taken to extend it. A dairy farm is also attached to the Dacca Asylum. Action was about to be taken with a view to starting this experiment in the other three asylums.

In the Bhowanipur Asylum, containing European and Eurasian patients only, the population during 1892 was 61, or 11 more than in the previous year. Of this number 35 were under detention at the beginning of the year, and 26 were subsequently admitted, including nine criminal lunatics. In the course of the year 17 patients were discharged cured, one was despatched to Europe under the Merchant Shipping Act, four were transferred to the care of friends, one was deported to Europe as still insane, and two died, leaving 35 under detention, the same number as at the close of 1891. There was no want of accommodation, and the health of the patients was good throughout the year. The question of closing this asylum and transferring the patients to the Dallanda Asylum has been abandoned for the present, the committee to whom the matter was referred not being able to recommend any practicable and economical arrangement.

The population of the four lunatic asylums (Agra, Bareilly, Benares, and Lucknow) in the North-Western Provinces and Oudh in 1892 was 1,281, including 274 admitted during the year, against 1,278 in 1891. Before the close of the year 202 patients were discharged, of whom 132 were reported as cured, and 66 were made over to friends, and 93 died, leaving 986 under treatment at the end of the year. The year was somewhat unhealthy, and the death-rate per 1,000 of average strength rose from 86·4 to 90·8, the increase being due to a severe outbreak of influenza in the Bareilly Asylum, and to the prevalence of malarial fevers in the Agra and Lucknow Asylums. Of the 93 patients who died, more than half the number were admitted into the asylums in bad or indifferent health. During the year the Agra Asylum was connected with the

North-
Western
Provinces
and Oudh

new water supply at that town. Various other improvements were either projected or taken in hand at the other asylums, and the Lieutenant-Governor hoped that by the close of 1893 the extensive buildings elaborated for Lucknow, an asylum which for some time past has given cause for anxiety, would be completed.

Punjab.

The total number of lunatics in the Lahore and Delhi lunatic asylums in the Punjab during 1892 was 472, including 132 fresh admissions, against 432 in 1891. At the end of the year the number was reduced to 341 by the discharge of 61 patients (44 as cured, and 17 made over to friends), three escapes, and 67 deaths. The year being a very unhealthy one, both sickness and mortality in the asylums were much greater than in 1891. The cases in hospital numbered 766, or 234 more, but the increase was confined to Lahore, as in Delhi there was a decrease of nine admissions. Of the 67 deaths, which yielded a ratio of 142 per 1,000 against 74 in 1891, the Lahore Asylum recorded 52, equal to a ratio of 210·2, and of these 20 were admitted in bad health. Cholera accounted for 12 deaths, "so that altogether the "apparent causes and conditions acting during the year 1892 were of themselves "sufficient to account for a high mortality." In the Delhi Asylum there were 15 deaths or 156·1 per 1,000, against 12 or 130·2 in 1891. Pneumonia was the chief cause of mortality in this asylum, and accounted for five deaths; from cholera there was one fatal case.

Burma.

The Rangoon Asylum is the only one in the province of Burma. The accommodation it provides being inadequate, a number of lunatics are confined and treated in a part of the Rangoon central jail. It was intended to build a new asylum at Mandalay to meet the increase in the number of lunatics, but owing to financial exigencies the scheme has been abandoned. It has now been determined to enlarge the present asylum, so as to provide adequately for the accommodation of lunatics from all parts of the province. During 1892 there were 356 lunatics in the Rangoon Asylum, including 102 fresh admissions, and the total was reduced at the close of the year to 265 by the discharge of 64 for different causes and the death of 27. The health of the lunatics was not so good as in 1891; there were 113 admissions to hospital as compared with 75, and the deaths rose from 22 or 80·5 per 1,000 of average strength to 27 or 102·0. No less than 23 of the new cases were in bad and indifferent health on admission, and nine of the 27 deaths occurred among persons admitted during the year.

Central Provinces.

In the two asylums of the Central Provinces (Nagpur and Jubbulpore) there were 323 lunatics under treatment during 1892, and of these 62 were fresh admissions. In the course of the year 33 patients were discharged as cured or otherwise, and 11 had died, leaving 279 still under treatment at the commencement of 1893. The year under notice was a fairly healthy one in both asylums. There was no overcrowding, and they were free from cholera, but the epidemic of influenza affected both, causing 16 admissions to hospital at Nagpur, and nine admissions and one death at Jubbulpore. The chief cause of sickness was, as usual, malarial fever, which caused 53 admissions at Nagpur and 27 at Jubbulpore. There were only 10 admissions from bowel complaints (three at Nagpur and seven at Jubbulpore), indicating "that the food and the "water supply are good at both institutions." Of the 11 deaths, Nagpur recorded three, which represented a ratio of 22·9 per 1,000 of the average strength, being the lowest recorded in 10 years. At Jubbulpore the deaths fell from 15, or 112·1 per 1,000 in 1891 to 8 or 57·2. Four of the deaths at this asylum were those of very old and weakly persons. Extensive structural improvements were completed during the year at Nagpur, and at Jubbulpore new latrine accommodation was provided.

Assam.

There is only one lunatic asylum in the province of Assam. This is situated in Tezpur, and the building is reported to be at present large enough for all demands on it. The total number of lunatics under treatment in the asylum during 1892 was 154, being a decrease of 13 on the number of the previous year. Of these 43 were fresh admissions. At the close of the year the population of the asylum was reduced to 110, 36 of the total number having been discharged, five died, and three escaped. There was a substantial reduction in sickness as well as in mortality as compared with the results of 1891, the ratio of admissions to hospital per 1,000 of average strength having declined from 585 to 435, and the death-rate from 150·4 to 44·4 per 1,000. Although cholera was prevalent among the civil population, only one suspected case occurred in the asylum, which was segregated and cured. Of the five deaths, phthisis claimed two, and chronic dysentery, pleuro-pneumonia, and epilepsy one each. The

Chief Commissioner visited the asylum in January 1893, and was generally satisfied with the results of his inspection.

At the commencement of 1892 there were 592 patients under treatment in the three lunatic asylums (Madras, Calicut, Waltair) of the Madras Presidency. During the year 245 fresh cases were admitted, bringing the total population up to 837, or 27 more than the number in the preceding year. In the course of 1892 there were 181 cases of discharge, and of these 77 were cured. The results of the year were, on the whole, favourable. The accommodation in the asylums was ample, and there was an increase in the percentage of cures, and a decrease in the death-rate. There were 104 deaths, equal to a ratio of 182·2 per 1,000 of average strength, against 114 or 185·7 in 1891. The decrease in mortality, however, was confined to Madras Asylum, whose death-rate fell from 230·9 per 1,000 to 173·4. The other two asylums showed a large increase, the death-rate of Calicut having risen from 92·1 to 202·5, which was chiefly due to an outbreak of cholera, and that of Waltair from 76·0 to 209·8. This asylum was free from cholera, and the high rate of mortality represented only nine deaths. In Madras Asylum there were nine cholera cases, with eight deaths. In both the asylums affected with cholera active measures were adopted, including isolation of those attacked, and the spread of the disease was successfully combated. Of the total number of insanes under treatment, 225 belonged to the criminal class, and of these 62 were discharged or transferred and 18 died.

The total population of the six lunatic asylums of the Bombay Presidency (Colaba, Ratnagiri, Poona, Dharwar, Ahmedabad, and Sir Cowasji Jehangir, Hyderabad) rose from 961 in 1891 to 999 in 1892, including 290 fresh admissions. In the course of the year 174 patients were discharged, 91 of them as cured, and 112 died, leaving 713 under treatment at the close of the year. There was slightly more sickness in the asylums than in 1891, and the death-rate rose from 98·1 per 1,000 of average strength to 151·8. Of the 112 deaths 27 were due to dysentery, 21 to diarrhoea, 13 to phthisis, and 11 to remittent fever. The increase of 42 deaths was spread over all the six asylums. At Colaba the high death-rate of 163·3 was due to dysentery, diarrhoea, and phthisis during the rains and the cold weather. At Poona the death-rate of 202·1 was due chiefly to diarrhoea and debility among inmates admitted in a weak and debilitated condition. And the high death-rate of Hyderabad of 222·0 was attributed to the exceptional unhealthiness of the hot season, "the principal feature of which" was the unprecedentedly high inundation of the Indus, the level of which was "3 to 4 feet above that of the asylum ground. After the inundation subsided, "malarial fever and pneumonia appeared in a virulent type both among the lunatics" and the asylum establishment."

Medical Schools.

The number of medical schools open in Bengal during 1891-92 was 10, the same as in the preceding year. The Medical College, Calcutta, is affiliated to the University, and prepares candidates for its various medical degrees. The four Government medical schools train pupils as Civil Hospital Assistants, and the unaided schools follow their own standards for private practice. The total number of pupils attending the various medical schools in the province rose from 1,290 in 1891-92 to 1,545 in 1892-93.

On the opening of the session in the Calcutta Medical College, 255 students resumed their studies, seven rejoined, and 139 new students were admitted, making a total of 401, against 322 in the previous year. The strength of the College at the close of the session was reduced to 281. As regards the examinations, 56 candidates (including 1 female) passed the Preliminary Scientific L.M.S. examination; 27 passed the First L.M.S.; 10 passed the Second L.M.S.; 13 passed the Preliminary Scientific M.B.; 9 passed the First M.B.; 2 passed the Second M.B.; and 1 passed in Honours in medicine. Eleven military pupils passed and left for regimental duties; 10 Native *dais* passed in midwifery from the Eden Hospital and received certificates of qualifications, and 13 pupil-nurses also passed as midwives.

The Campbell Medical School had 297 pupils on its rolls on the 31st March 1893. Out of 73 male and 4 female second year students, 57 and 4 respectively passed the first license examination. For the second or final license examination there were 61 candidates, including 7 females, and of these, only 18 male students and 5 females were successful. In the compounder class there were 81 males and 1 female.

At the Dacca Medical School there were 180 pupils on the rolls, 5 being in the fourth-year class, 36 in the third-year class, 62 in the second-year class, and 77 in the

first-year class. Twenty-eight students of the third-year class passed the final examination, and obtained their diplomas as vernacular licentiates; and 25 students of the second-year class passed the junior diploma examination and were promoted to the third-year class.

The Temple Medical School, Patna, had 183 students on its rolls, an increase of 56 compared with the previous year. Out of 37 students who competed for the second license or the final examination 23 passed; and 33 pupils of the second-year class passed the first license examination out of 49 who competed. The results of the compounder class were on the whole satisfactory; ten obtained certificates during the year, of whom 6 were taught in the school, and 4 came up from outside.

At the Cuttack Medical School there were altogether 86 pupils. Out of 21 third-year pupils, 17, including a native Christian girl, passed the final examination and received diplomas; and of the 21 pupils of the second-year class, 19 were promoted to the third-year class. There were no candidates during the year for the compoundership examination.

Good work was also being done in the diffusion of medical knowledge among the people of Bengal by private enterprise. There are five unaided medical schools, three at Dacca and two at Calcutta.

The number of pupils of the various classes of the Agra Medical School who attended the examination at the close of the year 1892-93, was 203 as compared with 213 at the end of the preceding year. At the final examination 31 out of 43 candidates passed. For the first time since 1887 the military students beat the civil and private students at the final examination. Students who completed their course of training in three years thus gained a higher number of marks than those who passed the four-year course prescribed for them. The civil class is composed of two kinds of pupils; first, candidates for Government service, who receive scholarships as well as a free education, and who are bound to serve Government for a certain period if required to do so, and secondly, pupils—some of them medical missionaries, who, though they do not receive scholarships, pay no education fees, and are under no obligations of any description. The private students, however, did well as a class compared with other years, five out of eight of them having succeeded in obtaining diplomas. Of the 43 female pupils, seven were fourth-year students, and five of them succeeded in passing their final qualifying examination. A Hindu student passed highest in the female list and gained two medals. She is a private student and intends setting up in practice on her own account in Meerut, her native place. At the intermediate examinations, the female students were not so successful, only 10 out of 21 second-year students having passed. The failure was attributed to the low standard of general education of the female pupils, a matter which was receiving the attention of the Local Government.

The total number of students at the Lahore Medical College and School during 1892-93 was 397 against 322 in the previous year. Of these 158 (including 10 females) were in the College Class, and 239 (including 8 females) were in the Medical School. Of late years the College has developed very rapidly. In 1887-88 the number of students was 61, and in 1892-93 they had increased to 158. There has also been a satisfactory increase in free students. During the same period they have risen from 18 to 93, but the increase of free students in the year under notice, from 79 in 1891-92 to 93, took place among students from the North-Western Provinces, of whom there were 16 more than in the previous year, as the number of Punjab free students fell from 66 to 64. At the College examinations 40 candidates presented themselves for the junior examinations in the Assistant-Surgeon class, and of these 12 or 30 per cent. were successful in all subjects. At the final examination 15 passed out of 25, equal to 60 per cent., which compares very favourably with the results of the previous year, when only 8 or 42 per cent. out of 19 passed the required test. Out of 50 candidates in the Hospital Assistant class, 30 or 60 per cent. were successful. In the previous year 73.6 per cent. of this class passed the necessary examination.

The total strength of the Madras Medical College during 1892-93 was 480, being a decrease of 7 on the attendance of the previous year. Of these 35 were female students against 41 in 1891-92. In the Hospital Assistant Department, consisting of 284 pupils, 52 appeared for the final examination and all but two passed successfully. The results of the several University examinations show that a larger number of candidates were successful as compared with the previous year, 64 having passed on the whole out

of 125 candidates entered, against 32 out of 122 in 1891-92. Fewer students sought admission into the L.M.S. classes, owing to the circumstance that, in consequence of the raising of the standard of admission, under the revised byelaws of the University, matriculates would have but one chance of competing for the L.M.S. examination.

The Board Medical School, Nellore, had 38 pupils (including five Mohammedans) on its rolls. Four students appeared for the final examination for the Hospital Assistant grade, and all passed, two of them being placed in the first class. At the Prince of Wales' Medical School, Tanjore, there were 22 pupils, 12 of whom were native Christians, five Brahmans, and the remainder non-Brahman Hindus. Eleven candidates appeared for the Hospital Assistant examination, and all passed, the Government gold medal being won by a student from this school.

The attendance at the Grant Medical College, Bombay, rose from 222 in 1891 to Bombay. 239 (including 29 females) in 1892. For the first University examination in medicine there were 71 candidates, of whom only 38 were successful; and for the second examination in medicine 34 passed out of 55 candidates. For the L.M.S. examination there were 48 candidates, and only 17 were successful. As usual, the greater proportion of the failures were those who had already failed on previous occasions. In reporting on the general progress of the students, the Principal expresses himself as thoroughly satisfied with the results of the improved laboratory training on the attainments of the students, and considers that the instruction given in physiology and chemistry can compare favourably with that of any medical school of the United Kingdom.

The Government Medical Schools at Poona, Ahmedabad, and Hyderabad continued to work satisfactorily. The number of students was 201, and of these 53 passed the third year examination.

VII.—SANITATION.

Civil.

Bengal.

Much useful sanitary work was executed in Calcutta during 1892, especially in the extension of drainage and water supply, and the improvement of bastis. On the latter nearly $8\frac{3}{4}$ lakhs of rupees have been expended during the last ten years. The drainage system of the town proper has been virtually completed for some time, but improvements continue to be carried out when necessary. A large flushing reservoir holding 300,000 gallons was constructed in the course of the year near the Bhowanipur pumping station, and provision has now been made for a large extension of the flushing system. Much, however, remains to be done in the added or suburban area, where, it is reported, there are some 200 miles of open drains which can be adapted and used for surface drainage. This matter was receiving the careful attention of the Commissioners, and a great advance in this direction was shortly expected. By the construction of two new settling tanks the daily supply of filtered water per head of population in the town has been increased to 37·32 gallons, and in the added area to 17·58 gallons. Eighteen miles of distribution pipes were laid, bringing the total up to 285·73 miles, and the number of premises supplied now reaches 22,831. In addition to the town supply, Barrackpore was provided with an average of 128,118 gallons daily throughout the year. The unfiltered supply for bathing, flushing drains, and street watering amounted to 4,320,879 gallons. Steps were being taken for extending the benefits of pure water to areas outside the limits of the municipality, the Commissioners during the year having agreed to supply the Maniktala municipality with filtered water up to a maximum of 10 gallons a head at a cost of four annas per 1,000 gallons, and a scheme for supplying other municipalities was in preparation. Calcutta was further improved by the completion of the Harrison and Lansdown Roads which are described as fine works.

The municipalities of the interior of Bengal spent Rx. 147,871 on sanitation, being an increase of Rx. 14,114 on the sum expended in 1891. In improving town and rural areas the local bodies spent Rx. 33,466, and a further sum of Rx. 31,917 was contributed by private individuals, the most important work undertaken being the construction of waterworks at Nasirabad in the Mymensingh district by Raja Surya Kanto Acharji Bahadur, at a cost of Rx. 14,276. No sanitary works of any great importance were carried out during the year, but as the Army Sanitary Commission notice "there is evidence that a decided desire for such improvements had been awakened," for the demand by local bodies for surveying instruments which the Government had purchased for the use of the Sanitary Board was so great that several more sets had to be obtained. The Sanitary Commissioner in his report for the year under notice gives a graphic description of the insanitary condition of Bengal villages, "rural sanitation being virtually unknown in the province." In his resolution on Dr. Gregg's report the Lieutenant-Governor remarks that the sanitary question in Bengal, in its various phases of silting-up deltaic rivers, obstructed drainage, uncleanly towns, and unhealthy villages, is the pressing question of the day, and that early action will have to be taken to solve it.

The Bengal Sanitary Board was not able to hold more than one meeting during the year, owing to the frequent absence of some of the members on tour. Among the more important matters which came under their consideration were the drainage and water-supply of the town of Pubna, and the drainage of the towns of Dinajpur and Jamalpur. Several projects for water-supply and drainage, proposed by Municipal Commissioners and District Boards were also submitted to the Sanitary Board, in fact they became so numerous that the Lieutenant-Governor found it necessary to define the duties of the Board with regard to the preparation of such projects, and precise instructions on the subject were issued.

North-
Western
Provinces
and Oudh.

Satisfactory progress was made in sanitary work in the North-Western Provinces and Oudh during 1892. The supply of Agra and Allahabad with filtered water from water-works which were completed in 1890 and 1891 respectively, has resulted in an improvement in the death-rates of these towns, but the advantages of an improved water supply appears to be counterbalanced somewhat by indifferent conservancy or drainage. The Benares waterworks were completed and opened on the 18th November

of the year under notice by the Lieutenant-Governor, and the works in connexion with an extensive drainage scheme were commenced. At Lucknow and Cawnpore the construction of waterworks was commenced, and schemes for improved water-supplies for Mussoorie, Rajpur, Dehra, and elsewhere were in progress or proposed. At Naini Tal a drainage and sewerage scheme was approaching completion, and projects for the drainage of Cawnpore, Farukhabad, and Jhansi were under consideration. In many towns the drainage and private conservancy arrangements are still defective and require, the Government observe, the close attention of the local authorities. It was proposed to deal with certain of the smaller towns under the Village Sanitation Act which became law on the 19th January 1893.

The question of the reconstitution of the Sanitary Board of the province was before the Government during the year, but final orders on the subject had not been issued at the close of the year. So far the functions of the Board have been purely of a consultative nature, there being no executive authority. It advised on many important matters, and drafted the Village Sanitation Bill, which, as stated above, has now become law. The more urgent projects for the relief of obstructed drainage in certain tracts have for some time engaged the attention of the Board, and the important question of carrying into effect the above Act has now been referred to them for consideration.

The expenditure on sanitary works in the municipalities of the Punjab during 1892 amounted to Rx. 147,243 against Rx. 120,469 in the previous year. Several important works were either completed or in progress during the year. The Delhi and Abbottabad waterworks were completed, and the former was formally opened by the Lieutenant-Governor in November; a part of the Delhi drainage scheme was sanctioned, and a loan of three lakhs was promised the municipality to carry out the project. At Simla the extension of the waterworks and the sewerage improvements were making rapid progress. The waterworks for the town and cantonment of Kohat were being pushed on, as were also those of Dalhousie and Murree; while schemes for supplying Bhiwani in the Hissar district, Umballa, Mooltan, Sialkot, Amritsar, Wazirabad, and Haripur with water were under consideration. Great improvement was effected in the drainage of Peshawar, and the intro-mural drainage works at Gujranwala were nearing completion; projects for the drainage of several other places were either in progress or under consideration. Several sanitary works of public utility were also constructed during the year by private individuals. Manure and town sweepings continued to be utilized to a considerable extent in the different municipalities, and in 1892 the large sum of Rx. 12,880 was realised by their sale.

The Sanitary Board held six meetings during the year, at which they considered and recommended the adoption of improvements in the rules for the collection of vital statistics, which were approved by Government. They also recommended the appointment of a first-class executive or superintending engineer to their body, as suggested by the Army Sanitary Commission in their memorandum on the Sanitary Commissioner's report for 1890. With regard to this proposal, it is reported that a scheme has been worked out for the employment of a sanitary engineer, the cost of the appointment to be recovered from municipalities at a percentage of their incomes. Municipalities have been asked for their views on this matter.

The expenditure by the Public Works Department of Burma on sanitary works and improvements during 1892 amounted to Rx. 2,017, including Rx. 860 on water-supply in the lower portion of the province, and to Rx. 2,475, including 1,548 on water-supply, in the upper portion. This expenditure was, for the most part, devoted to the erection of latrines, and other minor improvements. Much activity is reported to have been displayed throughout the larger towns of the province in the matter of conservancy. Considerable progress was made in closing cesspits, "which may be truly described as the "bane of all the large towns in Burma." In Rangoon the Shone and Ault sewerage system continued to work successfully, and the number of house connections was doubled. "It is gratifying to find," the Sanitary Commissioner writes, "that, as the houses become connected with the sewerage system, the death-rate in areas "which are served by this means steadily decline." The proposal of the Municipal Committee to borrow 7 lakhs of rupees for increasing the pressure on the water-supply of the town, the present pressure being inadequate, was sanctioned by the Local Government. Another important measure for the welfare of Rangoon, which is now in operation, is the reclamation of the low-lying lands in the east of the town. The schemes include an extensive programme of reclamation, distributed over a period

of five years, and costing $15\frac{1}{2}$ lakhs, the greater part of the expenditure being met from the proceeds of the sale of Government lands in other parts of Rangoon. The water-works at Prome continued to work satisfactorily, and the water supply of Akyab was much improved. The scheme for supplying the town of Mandalay with water was still under consideration though well advanced.

The Sanitary Board was in existence throughout the year, but had not much progress to report; the Board was mainly occupied in considering the surveys of selected towns. The proposal to appoint a sanitary engineer to the Board has been abandoned for the present.

Central Provinces.

A good deal of sanitary work of more or less importance was accomplished in the Central Provinces during 1892. The Raipur waterworks were opened by the Chief Commissioner on the last day but one of the year. The population present and prospective supplied is 28,000 and 40,000 respectively, and the rate allowed is 10 gallons a head for 12 hours. In his remarks on these works the Sanitary Commissioner says, "I have specially to note the excellent principle on which these works are made. Those at Jubbulpore and Nagpur are of the nature of the ordinary Deccan tanks for surface water. Extensive catchment areas have to be conserved, and there is no filtration. In the Raipur works the source is not the river directly, but the subterranean percolation stream that attends it, and there is no trouble with catchment area or filter beds. The river bed with its shifting alluvia is the filter. The results are excellent. The water is perfectly clear and transparent, and has the character of filtered river water, and the natives find it answers their test of softness, cooking and all, properly." The waterworks of the town of Berhampore were improved, the estimated cost being Rx. 14,128. An estimate for supplying the town of Rajnandgaon with water on the Raipur system was sanctioned, and the work was in progress. The Raipur water supply was improved by the laying of a second main, and the Harda and Khandwa waterworks surveys were completed. Drainage surveys were carried out for the towns of Jubbulpore, Nagpur, Saugor, Bilaspur, and Sambalpur. The municipalities expended a sum of Rx. 24,687 on sanitation, over Rx. 19,000 of which were devoted to conservancy.

The Sanitary Board, which was strengthened by the addition of the Chairman of the District Council, held 15 meetings in the course of the year. Under the direction of the Board important minor sanitary works were carried out, consisting chiefly of improvements of village water supplies by construction of new wells, improvement of others, and special attention was given to the provision of pure water for the lower castes. The drainage and cleansing of village sites also received careful attention. The expenditure in all districts on works sanctioned by the Sanitary Board, was approximately Rx. 7,643. "A substantial beginning," the Government observe, "has been made in every district of the province, an expenditure on village sanitation falling not far short of a lakh of rupees having been most usefully and profitably incurred."

Assam.

No sanitary work of any great importance was executed or undertaken in Assam during 1892, but good progress was made in carrying out sanitary improvements generally. The ratio of expenditure on sanitary works to the total income of the municipal bodies advanced from 54·7 per cent. in 1891 to 60·3 in 1892. The Chief Commissioner of the province was satisfied that village sanitation was receiving the careful attention of the Local Boards, and that with the limited income at their disposal expenditure on sanitation had been on the whole judiciously incurred. An addition has since been made to the provincial grant to Local Boards, with the promise of a further increase, and "with these extra funds at their disposal the Chief Commissioner expects that every Local Board will increase its annual expenditure on sanitary works, and more especially in the direction of supplying good wells to every large village, as well as to every important market held outside municipal limits."

The constitution of the Sanitary Board remained the same as in the previous year. The Chief Commissioner decided that instead of the Board holding formal meetings as hitherto, all correspondence relating to village sanitation should be circulated for the opinion of members. During the year the Board appears to have been occupied mainly in considering the improvements of water supply, drainage, and conservancy of villages.

Madras.

Sanitary work executed in the Madras municipality during 1892 was of a minor character. The question of improving the drainage and water-supply of the city was

still under the consideration of the Municipal Commissioners, the report of the expert (Mr. Cousins) who had been deputed to investigate the matter not having been received at the close of the year. The President of the Municipality says "the people of Madras, generally, are fully alive to the benefits of sanitary work, so long as their own interests are not touched, and they are not required to take any personal trouble. . . . The great block to sanitary progress is the extreme poverty of the town, in consequence of which the municipal funds have hitherto proved insufficient for the most necessary sanitary works. The most hopeful sign is that the people are so fully alive to their own sanitary wants."

In the other municipalities of the Presidency, numbering 55, the bulk of the sanitary work consisted in the sinking and repairing of wells, construction and repair of drains, public latrines, markets, &c. The sum assigned for sanitary improvements was Rx. 153,948 equal to 60·3 per cent. of the year's municipal income, and during the first nine months more than half of the amount was spent for this purpose. The District Boards also allotted Rx. 63,174, or 8 per cent. of their income, for sanitary purposes, the work executed being similar to that carried out in the municipalities. On the whole sanitation in the Presidency received increased attention during the year, but there is still much room for improvement. "There is no doubt," the Sanitary Commissioner remarks, "that progress in sanitary matters is being made in most municipalities, and that many chairmen and municipal councillors are thoroughly aware of the close relation that exists between sickness and mortality from which the people annually suffer and the insanitary conditions among which they live, and as far as lies in their power, do all that is possible, with the means at their disposal, to remove existing defects and adopt measures to protect the public health. Many insanitary defects, however, still exist in all towns, and their removal must be a work of time and require a large expenditure of money."

In the Sanitary Engineering Department considerable progress was made in sanitary work. The Army Sanitary Commission consider the Report of the Sanitary Engineer a very gratifying record, and sets an example "which might be followed with great advantage by other provinces." Thirteen towns were surveyed and levels taken in connection with projects of water-supply and drainage, and in seven others preliminary steps were taken to allow of the preparation of similar schemes. Nine water-supply and drainage works, estimated to cost Rx. 146,100 in the aggregate, were in course of construction during the year. Of these, two, viz., the Kandal drainage and south water-supply schemes in Ootacamund were completed, while satisfactory progress was made with the water-supply works at Madura and Cuddapah, the Coonoor and Kumbakonam drainage schemes, and the realignment of the Ootacamund main sewer. The Trichinopoly and Tanjore water-supply schemes were put in hand too late to admit of much work being done within the year. Schemes for the improvement of water-supply in five towns, and for that of drainage in another, estimated to cost some Rx. 241,800, were submitted to Government. Of these, the Bellary, Cocanada, and Coimbatore water-supply projects were abandoned as beyond the means of the Municipal Councils and the others, viz., a drainage scheme for Negapatam and water-supply projects at Ongole and Kurnool, were under consideration. The Department also scrutinised 165 plans and 202 estimates for sanitary works of the value of Rx. 21,771, and furnished plans and designs wherever necessary.

The Madras Sanitary Board consists only of two members, the Sanitary Commission and the Sanitary Engineer, who exercise a general supervision over the municipalities and local boards.

The expenditure of the Health Department of the City of Bombay on sanitary measures during 1892 was Rx. 117,552. By the introduction of the Tansa supply, the quantity of water was increased from 16½ to 29 millions of gallons, and the number of house connections rose from 18,113 to 18,486. Various improvements were carried out in the drainage of the city, but there is still a great want of proper drainage in many parts. The Health Officer points out that in some districts, where the daily water supply is equal to 60 gallons per head of population, there are no drains for carrying off subsoil water or drainage, and that in the new undrained districts the people may be said to be living amongst sewage. Steps have already been taken to remedy this state of things on the lines recommended by that officer. Just before the close of the financial year the Corporation sanctioned an expenditure of Rx. 70,961 for the sewerage of Colaba on the Shone system, and the work was at once taken in hand.

In the other municipalities Rx. 81,925 were devoted to conservancy. The principal works in progress were the drainage schemes at Hyderabad and Karachi, and the waterworks at Hubli and Dhulia, which were nearing completion. The Ahmedabad waterworks, which were opened in the previous year proved a great success, and the number of applications for house connections was so large that the municipality was unable to comply with them fast enough. Schemes for supplying Surat, Thana, and Kalyan with water were under consideration. The drainage works completed for part of the Ahmedabad city were working satisfactorily, and a scheme for the surface drainage of Nadiad was sanctioned. Besides these a large number of works for the improvement of the water-supply of the small municipal towns was completed or in progress.

The Sanitary Board, consisting of the Sanitary Commissioner and the Sanitary Engineer, who was appointed early in 1892, had under their consideration during the year many important projects for water supply, drainage plans, and estimates, also improvements of public conveniences, such as latrines and urinals, regarding which they submitted new designs to Government.

Berar.

Good work was effected during 1892 in Berar in connection with sanitation in municipalities and districts, but much still remains to be done to improve the drainage, water supply, and conservancy of towns and villages. It is only in some of the municipal towns, it is reported, that any attempt at systematic drainage exists. The municipalities spent 61.1 per cent. of their total income (Rx. 22,152) on sanitary works, as compared with 48.6 per cent. in 1891. Much attention was paid to conservancy in the municipalities, the expenditure under this head amounting to 23.8 per cent. of income. The only important work in progress was the water-supply of Akola at Kapsi, on which a considerable sum was expended. A complete system of drainage for Amraoti city was to be put in hand as soon as funds were available. Excluding municipalities a sum of Rx. 14,857 was spent by districts on village conservancy and minor sanitary improvements. In addition the Public Works Department spent Rs. 12,799, chiefly on the improvements of water supply.

Some progress was made by the District Sanitary Boards. They met once during the year at each head-quarter station, and were chiefly occupied in projects for improving the sanitary condition of villages. They discussed the sanitation and water-supply of 140 villages, in 41 of which improvements in these matters have been completed, and in the remainder want of funds prevented any action being taken. Regarding the Village Sanitary Boards, the Sanitary Commissioner was not impressed with the work done by them. "From what I have seen" he says, "the sanitation of the villages where these Boards exist is no better than those where they do not exist."

W. T. RONSON.

India Office,
13th September 1894.

ABSTRACTS

OF

SANITARY AND OTHER REPORTS

FOR

1892.

ABSTRACT OF REPORT OF THE SANITARY COMMISSIONER WITH THE GOVERNMENT OF INDIA FOR 1892.

(Surgeon-Major General W. R. Rice, M.D.)

European Troops.

Chiefly owing to the prevalence of influenza and malaria, sickness and mortality in the European army of India were, as may be seen in the following table, considerably increased. Sickness and mortality in 1892.

Abstract of Statistics of European Troops in India.

YEAR.	Average Annual Strength.	RATIO PER 1,000 OF STRENGTH.				
		Admissions.	Constantly Sick.	Deaths.	Invaliding.	Total Loss.
1870-79	57,742	1,475	60	19.34	43	62
1881-90*	61,399	1,471	73	14.24	27	42
1882-91	62,229	1,448	74	14.17	26	40
1891	67,030	1,379	79	15.89	27	43
1892	68,137	1,517	84	17.07	24	41

* Including troops in Afghanistan during 1881.

The chief causes of admission were ague, venereal diseases, injuries, diseases of the integuments, and simple continued fever. Among the diseases with increased admission rates were influenza (12.7 per 1,000 against 5.5), remittent fever (13.1 per 1,000 against 6.8), ague (429.1 per 1,000 against 343.5), venereal diseases (409.9 per 1,000 against 400.7), simple continued fever, and respiratory diseases. On the other hand, the admission rate from cholera was reduced from 3.8 to 2.5, the admission rate from alcoholism from 7.5 to 4.3, and the admission rates from tubercle of the lungs, dysentery, and diarrhoea were also lessened. Ague caused 28 per cent. of the total sickness, and venereal diseases 27 per cent.

The chief causes of mortality were enteric fever, cholera, remittent fever, hepatic abscess, heatstroke, tubercle of the lungs, dysentery, and pneumonia. Among the diseases with increased mortality were remittent fever (1.10 per 1,000 against 0.42), small-pox, dysentery, hepatic abscess, tubercle of the lungs, and pneumonia. On the other hand, mortality from cholera (1.78 per 1,000 against 2.51), enteric fever, and injuries was lessened. Enteric fever caused 32 per cent. of the total deaths, and cholera 10 per cent.

The chief causes of invaliding were, in order, debility, syphilis and gonorrhoea, malarial fevers, mental diseases, tubercle of the lungs, rheumatism, dysentery, hepatitis, injuries, valvular diseases of the heart, and palpitation.

A new arrangement begins in this present report with regard to the statistics of ten-year periods. In each year's report some tables are now to be devoted to the statistics of the preceding ten years. In addition to this, at the end of each census-decade, a short comparison will be made of its statistics with those of former like periods. The decision of the Government of India that the decades shall correspond with those of the census explains why 1881-90 is here taken as the decade for comparison with 1870-79, the year 1880 being dropped. In the way just described, the progress of sanitation from decade to decade will be indicated, while readers of the Annual Report will always have at hand the means of seeing how the year under review compares with the preceding 10 years taken as a whole, and also, though less fully, with each of the 10. The following two tables compare the health statistics of the decennium 1881-90 with those of the decennium 1870-79, and in the case of Bengal, the only presidency for which the figures are available, with those of the decennium 1860-69.

Admitted per 1,000 of strength.

ADMISSIONS FROM	INDIA.		BENGAL.			MADRAS.		BOMBAY.	
	1881-90.	1870-79.	1881-90.	1870-79.	1860-69.	1881-90.	1870-79.	1881-90.	1870-79.
Ague (a) - -	398	389	459	425	439	195	140	409	528
Venereal disease - -	360	203	366	209	265	367	198	330	191
Simple continued fever (b).	64	162	68	182	194	52	126	66	131
Respiratory diseases (c)	53	75	74	84	75	40	57	64	64
Diarrhoea - -	44	63	46	62	109	40	65	48	61
Rheumatism and neuralgia (d).	41	57	44	62	81	39	46	37	49
Dysentery - -	30	40	26	33	49	52	77	22	28
Hepatitis (e) - -	26	50	24	47	59	35	67	20	41
Enteric fever - -	13	5	15	5	†	9	4	10	3
Remittent fever - -	10	*	10	*	*	8	*	10	*
Phthisis pulmonalis - -	6	8	6	8	8	5	9	6	8
Influenza - -	4	—	3	—	—	6	—	2	—
Spleen diseases - -	3	6	4	7	†7	1	2	3	6
Total from all causes	1,471	1,475	1,552	1,522	1,755	1,257	1,264	1,431	1,533
Constantly sick per 1,000 of Strength.	73	60	74	61	67	73	60	69	57

(a) Includes febricula up to 1885 inclusive.

(b) Includes other continued fevers from 1860 up to 1885 inclusive.

(c) Includes tonsilitis and sore throat from 1860 up to 1885 inclusive.

(d) Includes some allied affections from 1860 up to 1885 inclusive.

(e) Includes hypertrophy and simple enlargement of the liver from 1860 up to 1885 inclusive.

* Included with simple continued fever.

† From 1864.

‡ Not separated from continued and remittent fevers.

Died per 1,000 of strength.

DEATHS FROM	INDIA.		BENGAL.			MADRAS.		BOMBAY.	
	1881-90.	1870-79.	1881-90.	1870-79.	1860-69.	1881-90.	1870-79.	1881-90.	1870-79.
Enteric fever - -	3·81	2·03	4·33	2·28	*	2·73	1·42	3·07	1·75
Cholera - -	1·46	3·22	1·48	4·18	9·24	1·05	1·68	1·87	1·53
Hepatitis - -	1·33	2·19	1·25	2·04	3·31	1·93	3·16	·97	1·71
Dysentery - -	·80	1·48	·60	1·37	2·72	·98	2·32	·98	·98
Phthisis pulmonalis - -	·74	1·18	·82	1·20	1·73	·59	1·18	·68	1·09
Respiratory diseases - -	·59	·97	·89	1·25	·99	·42	·82	·89	·70
Remittent fever - -	·52	1·28	·45	1·57	2·92	·69	·60	·60	·98
Diarrhoea - -	·09	·12	·07	·12	·75	·13	·04	·11	·17
Total from all causes	14·24	19·34	14·48	21·00	29·98	12·99	17·69	13·90	15·27

* Not separated from remittent and continued fevers.

The increase of the constantly-sick rate of India is probably connected with the increased prevalence of venereal diseases and ague; for both the admission and the death ratios from all causes were diminished. Owing to improvements in the grouping of diseases, made gradually in the course of the years, it is not possible in every case to show strictly the same group through two or three decennia; and in reading the tables the foot-notes must be taken into account. With regard to ague, it must be remembered that during the decennium 1881-90, large malarious territories, such as Baluchistan and Burma, were added to the Empire. As to the higher admission and death-rates from enteric fever some allowance must be made for the greater frequency with which the diagnosis "enteric fever" has been made of late years. All the other death ratios in the table were reduced, especially that from cholera. It seems that while the progress of sanitation in India has resulted in a general diminution of sickness and mortality, especially from cholera, much remains to be done in the reduction of malaria, and in the protection of the short service army from enteric fever and venereal disease.

The tables for 1882-91 for European troops will be found after the annual tables belonging to this section, and are headed Decennial 5, Decennial 18, Decennial 20, and Decennial 21. The Arabic numerals are used as a distinction from the Roman numerals of the headings of the annual tables; and, to facilitate reference, their

numbering has been arranged so that Decennial 5 is comparable with Annual V, 18 with XVIII, 20 with XX, and 21 with XXI. In the Report for 1893, Tables 5, &c., will deal with the decennium 1883-92, in the Report for 1894 with the decennium 1884-93, and so on. The decennium of Tables 5, &c., will therefore not always be so nearly identical with the census-decade as it is in the present volume. It will be observed that in these decennial tables the disease headings are not quite the same as in the corresponding annual tables. This is unavoidable, because it is only of recent years that certain of the diseases or groups of diseases now shown in the annual tables have been compiled and given separately; but arrangements have been made for the gradual assimilation of the headings in course of time. For example, pneumonia and abscess of the liver will have separate headings when 1889 becomes the first year of the decennium. In the same way stations now excluded will gradually come on the list, and stations now lumped together will be separated. Diseases that could not be shown for 10 years have been shown for six, or excluded altogether in the meantime. At the foot of Table 5 the ratios for India of some of the chief diseases have been given year by year for convenience of reference. Extracts from these decennial tables will be found in most of the minor tables throughout this section.

In the European army of Bengal sickness and mortality were increased by the Bengal prevalence of influenza and malaria. Cholera mortality, though lower than in the Army. previous year, was still high.

European Army of Bengal.

PERIOD	Average Annual Strength.	RATIO PER 1,000 OF STRENGTH.							
		Admissions into Hospital.	Constantly Sick.	Deaths from			Invaliding.	Total Loss.	
				Cholera.	Other Causes.	Total.			
1870-79	-	363,433	1,522	61	4.18	16.82	21.00	41	62
1881-90*	-	38,008	1,552	74	1.48	13.00	14.48	26	40
1882-91	-	38,517	1,519	75	1.46	13.04	14.50	25	39
1891	-	40,994	1,394	80	2.78	14.08	16.86	25	42
1892	-	42,198	1,382	87	2.42	17.39	19.81	23	42

* Excluding troops in Afghanistan during 1881.

The chief forms of sickness were ague, venereal diseases, diseases of the integuments, injuries, and simple continued fever. Among the diseases with increased admission rates were influenza (14.8 per 1,000 against 5.8), remittent fever (15.5 per 1,000 against 7.1), enteric fever, ague, respiratory diseases, bowel complaints, and venereal diseases. On the other hand, the admission rates from alcoholism, cholera, small-pox, and nervous diseases were lessened. Ague caused 30 per cent. of the total sickness, and venereal diseases 26 per cent.

The chief causes of mortality were enteric fever, cholera, remittent fever, hepatic abscess, injuries, and heatstroke. Among the diseases with increased mortality were remittent fever (1.59 per 1,000 against 0.39), heatstroke, tubercle of the lungs, pneumonia, and hepatitis. On the other hand, mortality from cholera, small-pox, and enteric fever was lessened. Enteric fever caused 32 per cent. of the total deaths, and cholera 12 per cent.

The chief causes of invaliding were, in order, debility, syphilis and gonorrhœa, malarial affections, mental diseases, tubercle of the lungs, rheumatism, hepatitis, dysentery, palpitation, valvular diseases of the heart, and injuries.

Although the number constantly sick in the European Army of Madras was slightly increased, admission and mortality were substantially reduced. Cholera mortality shared in the reduction. Madras Army.

European Army of Madras.

PERIOD.	Average Annual Strength.	RATIO PER 1,000 OF STRENGTH.						
		Admissions into Hospital.	Constantly Sick.	Deaths from			Invaliding.	Total Loss.
				Cholera.	Other Causes.	Total.		
1870-79	11,040	1,264	60	1·68	16·01	17·69	49	67
1881-90	11,759	1,257	73	1·05	11·94	12·99	28	41
1882-91	12,052	1,270	75	1·05	12·28	13·33	28	41
1891	13,324	1,304	82	1·58	12·91	14·49	31	46
1892	13,227	1,236	83	·53	11·79	12·32	33	45

The chief forms of sickness were venereal diseases, ague, injuries, diseases of the integuments, and simple continued fever. Among the diseases with increased admission rates were influenza (12·3 per 1,000 against 8·0), enteric fever, remittent fever, venereal diseases and rheumatism. On the other hand, the admission rates from cholera, bowel complaints, ague, simple continued fever, heatstroke, and scurvy were lessened. Venereal diseases caused 34 per cent. of the total sickness, and ague 13 per cent.

The chief causes of mortality were enteric fever, dysentery, and hepatic abscess. Among the diseases with increased mortality were dysentery, ague, and nervous diseases. On the other hand, mortality from cholera, remittent fever, heatstroke, injuries, pneumonia, and hepatic abscess was lessened. Enteric fever caused 26 per cent. of the total deaths, dysentery 10 per cent., and hepatic abscess 8 per cent.

The chief causes of invaliding were, in order, syphilis and gonorrhœa, debility, rheumatism, dysentery, and malarial affections.

Bombay
Army.

In the European Army of Bombay sickness was increased by influenza and malaria, but mortality was considerably reduced, especially cholera mortality.

European Army of Bombay.

PERIOD.	Average Annual Strength.	RATIO PER 1,000 OF STRENGTH.						
		Admissions into Hospital.	Constantly Sick.	Deaths from			Invaliding.	Total Loss.
				Cholera.	Other Causes.	Total.		
1870-79	10,359	1,533	57	1·53	13·74	15·27	43	58
1881-1890*	11,378	1,431	69	1·87	12·03	13·90	32	46
1882-91	11,660	1,399	69	2·08	11·89	13·97	30	44
1891	12,713	1,409	73	2·60	11·64	14·24	29	43
1892	12,712	1,593	74	·94	11·96	12·90	21	34

* Excluding troops in Afghanistan during 1881.

The chief forms of sickness were ague, venereal diseases, injuries, diseases of the integuments, and simple continued fever. Among the diseases with increased admission ratios were influenza (6·0 per 1,000 against 2·1), small-pox, malarial fevers, simple continued fever, pneumonia, and enteric fever. On the other hand, the admission rates from cholera, bowel complaints, hepatitis, and venereal diseases were lessened. Ague caused 33 per cent. of the total sickness, and venereal diseases 25 per cent.

The chief causes of mortality were enteric fever, cholera, injuries, and hepatic abscess. Among the diseases with increased mortality were small-pox, remittent fever, suicide, and alcoholism. On the other hand, mortality from cholera, dysentery, heatstroke, and pneumonia was lessened. Enteric fever caused 39 per cent. of the total deaths, and cholera 7 per cent.

The chief causes of invaliding were, in order, debility, syphilis and gonorrhœa, malarial affections, injuries, tubercle of the lungs, mental diseases, hepatitis, and palpitation.

The health statistics of the troops serving in Quetta were more favourable than in 1891, though the constantly sick ratio was raised.

PERIOD.	Average Annual Strength.	RATIO PER 1,000 OF STRENGTH.				
		Admissions.	Constantly Sick.	Deaths from		
				Cholera.	Other Causes.	Total.
1884	1,441	2,056	82	27·07	41·63	68·70
1885	1,672	2,187	94	42·46	40·67	83·13
1886	1,752	2,442	73	20·57	19·41	19·98
1887	1,932	1,374	52	1·03	10·35	11·38
1888	2,223	1,140	59	—	13·50	13·50
1889	2,210	1,152	58	0·90	9·05	9·95
1890	2,019	1,099	58	—	9·41	9·41
1891*	2,162	1,622	62	6·48	7·40	13·88
1892*	2,213	1,522	72	—	9·94	9·44

* Excluding troops on the march.

There was increased prevalence of influenza and enteric fever and increased mortality from enteric fever.

The statistics of Gnathong were better in 1892 than in the other two years of its occupation.

PERIOD.	Average Annual Strength.	RATIO PER 1,000 OF STRENGTH.				
		Admissions into Hospital.	Constantly Sick.	Deaths from		
				Cholera.	Other Causes.	Total.
1890	78	1,782	64	—	38·46	38·46
1891	104	1,192	58	—	9·62	9·62
1892	112	1,027	45	—	—	—

There was an increase of dysentery, but no deaths from any cause.

The vital statistics of the troops serving in Burma were, as shown in the following table, better in 1892 than in 1891, and there was no cholera.

European Troops in Burma.

PERIOD.	Average Annual Strength.	RATIO PER 1,000 OF STRENGTH.				
		Admissions into Hospital.	Constantly Sick.	Deaths from		
				Cholera.	Other Causes.	Total.
1889	4,825	1,903	92	2·49	26·73	29·22
1890	4,712	1,743	102	—	20·80	20·80
1891	4,623	1,589	92	2·38	17·74	20·12
1892	4,316	1,491	91	—	14·83	14·83

Burma was distinguished by the prevalence of dysentery and hepatitis. In 1892 it was free from influenza.

Some of the more important causes of admission into hospital in the three Presidencies are shown in the following table in the direct order of their decennial ratios:—

Admitted per 1,000 of strength.

Admissions from	BENGAL.			Admissions from	MADRAS.			Admissions from	BOMBAY.		
	1892.	1891.	1882 to 1891.		1892.	1891.	1882 to 1891.		1892.	1891.	1882 to 1891.
Venereal diseases - -	412	396	377	Venereal diseases - -	415	402	380	Venereal diseases - -	396	417	354
Ague - - -	482	389	362*	Ague - - -	166	249	233*	Ague - - -	527	360	322*
Simple continued fever -	55	40	72*	Dysentery - - -	45	43	53	Simple continued fever -	66	60	79*
Diarrhoea - - -	36	35	44	Simple continued fever -	62	70	73*	Diarrhoea - - -	37	39	42
Dysentery - - -	25	23	25	Diarrhoea - - -	8	13	37	Dysentery - - -	19	25	22
Respiratory diseases -	40	37	38*	Hepatitis - - -	28	26	34	Hepatitis - - -	16	17	19
Rheumatism and neuralgia.	31	36	29*	Rheumatism and neuralgia.	40	37	37*	Rheumatism and neuralgia.	26	28	31*
Hepatitis - - -	18	18	23	Respiratory diseases -	30	28	26*	Respiratory diseases -	27	30	28*
Enteric fever - - -	27	25	17	Enteric fever - - -	12	11	10	Enteric fever - - -	18	16	11
Remittent fever - - -	16	7	9	Remittent fever - - -	11	8	8	Remittent fever - - -	7	5	8
Phthisis pulmonalis -	4	4	5	Influenza - - -	12	8	7	Phthisis pulmonalis -	5	5	6
Influenza - - -	15	6	4	Phthisis pulmonalis -	2	3	4	Spleen diseases - - -	2	2	3
Spleen diseases - - -	3	3	4	Spleen diseases - - -	—	1	1	Influenza - - -	6	2	2
TOTAL FROM ALL CAUSES	1,582	1,394	1,519	TOTAL FROM ALL CAUSES	1,236	1,304	1,270	TOTAL FROM ALL CAUSES	1,593	1,409	1,399

* For six years, 1886-91.

In all three Presidencies venereal diseases and ague head the list. For the decennium venereal diseases stand first in all three Presidencies, but in 1892 ague was highest in Bengal and Bombay. Ague in Madras was lower than in the decennium, but in Bengal and Bombay it was higher; and in all venereal disease was higher than it was for the decennium. Bengal had the highest admission ratios from respiratory diseases, enteric fever, remittent fever, influenza, and spleen diseases; Madras the highest from venereal diseases, hepatitis, rheumatism, and dysentery; Bombay the highest from ague, simple continued fever, diarrhoea, and phthisis pulmonalis.

Some of the more important causes of death in the three Presidencies are shown in the following table:—

Deaths from the Chief Diseases and from all Causes in the three Presidencies per 1,000 of strength.

Deaths from	BENGAL.			Deaths from	MADRAS.			Deaths from	BOMBAY.		
	1892.	1891.	1882-91.		1892.	1891.	1882-91.		1892.	1891.	1882-91.
Enteric fever - - -	6.40	6.64	4.73	Enteric fever - - -	3.18	3.08	2.95	Enteric fever - - -	5.03	5.58	3.36
Cholera - - -	2.42	2.78	1.44	Cholera - - -	.98	1.35		Cholera - - -	.94	2.60	2.03
Hepatic { Abscess - - -	1.28	.98	1.19	Hepatic { Abscess - - -	.15	.23	1.92	Hepatic { Abscess - - -	.63	.55	.80
Hepatic { Congestion and inflammation -	.07	.05		Hepatic { Congestion and inflammation -	.53	1.58		Hepatic { Congestion and inflammation -	.08	.16	
Phthisis pulmonalis -	.75	.61	.79	Cholera - - -	1.29	.45	.90	Dysentery - - -	.08	.47	.86
Pneumonia - - -	.81	.51	.87*	Dysentery - - -	.38	.83	.76	Phthisis pulmonalis -	.55	.63	.69
Other respiratory diseases	.17	.10		Remittent fever - - -	.60	.30	.54	Remittent fever - - -	.24	.08	.51
Dysentery - - -	.59	.44	.55	Pneumonia - - -	.30	.68	.57*	Pneumonia - - -	.31	.47	.55*
Remittent fever - - -	1.59	.39	.43	Other respiratory diseases	.08	.08		Other respiratory diseases	.16	.08	
Diarrhoea - - -	.09	.07	.04	Diarrhoea - - -	—	—	.11	Diarrhoea - - -	.16	.16	.09
TOTAL FROM ALL CAUSES	19.81	16.86	14.50	TOTAL FROM ALL CAUSES	12.32	14.49	13.33	TOTAL FROM ALL CAUSES	12.90	14.24	13.97

* For six years, 1886-91.

In all three Presidencies enteric fever heads the decennial list, followed in Bengal and Bombay by cholera and hepatitis, and in Madras by hepatitis and cholera. But in 1892 remittent fever occupied the third place in Bengal, and dysentery the second

place in Madras. Enteric fever increased in all three Presidencies; cholera and hepatitis only in Bengal.

Bengal had the highest death-rates from enteric fever, cholera, hepatic abscess, phthisis, pneumonia, other respiratory diseases, and remittent fever; Madras the highest from dysentery; Bombay the highest from diarrhoea. The percentage respectively of enteric fever, hepatitis, dysentery and pneumonia in the total deaths of each Presidency was:—

1892.

	Madras.	Bombay.	Bengal.
Enteric fever	32·3	25·8	39·0
Hepatitis	6·9	9·2	5·5
Dysentery	3·0	10·4	0·6
Pneumonia	4·1	2·5	2·4

Bengal was highest in pneumonia, Madras in dysentery and hepatitis, and Bombay in enteric fever.

Sickness in the Geographical Groups.—The following table shows that, judging by the constantly-sick rate, Groups II., XIIb. and V. were the most unhealthy for the decennium, and XIIa. the most healthy. It also shows that the 1892 constantly-sick rate of every group, except XIIb., was higher than its corresponding decennial ratio, and that the rise was greatest in the case of Group V.

Ratio per 1,000 of Strength.													
	I.	II.	IV.	V.	VI.	VII.	VIII.	IX.	X.	XI.	XIIa.	XIIb.	
	Burma Coast and Bay Islands.	Burma Inland.	Bengal and Orissa.	Gangetic Plain and Chutia Nagpur.	Upper Sub-Himalayan.	Indus Valley and North-Western Rajputana.	South-Eastern Rajputana, Central India, and Gujrat.	Deccan.	Western Coast.	Southern India.	Hill Stations.	Hill Convalescent Depôts.	India.
1882-91													
Constantly sick	74·6	91·4	82·8	88·0	81·6	79·4	78·8	69·8	72·0	75·7	65·1	90·6	74·0
Death—Cholera	·35	2·24	1·10	3·45	1·04	·85	2·19	·85	—	·38	1·51	·94	1·49
Death—Enteric fever	2·37	2·31	2·09	5·87	5·33	3·69	5·66	3·71	1·71	2·66	4·44	3·67	4·13
1891													
Constantly sick	83·7	100·0	99·7	98·7	86·7	70·8	78·2	75·7	85·9	87·5	65·8	81·9	79·1
Death—Cholera	—	·74	·45	9·68	1·26	3·03	3·92	1·69	—	·28	1·65	—	2·51
Death—Enteric Fever	3·08	4·43	4·98	6·55	8·73	4·11	6·99	4·43	—	4·19	5·84	8·93	5·73
1892													
Constantly sick	92·6	91·7	97·6	104·7	88·5	89·0	91·0	72·3	85·3	86·8	66·8	84·0	83·6
Death—Cholera	—	—	—	1·60	3·52	3·88	·66	·62	—	1·72	·33	2·27	1·73
Death—Enteric fever	·62	2·85	1·32	5·45	7·41	5·43	6·62	5·72	2·17	2·86	6·31	9·08	5·62

Of the 12 annual ratios of constantly sick, ten were higher than the ratio of India, and two lower, the highest being that of the Gangetic Plain, and the lowest that of the Hills. The highest admission ratio was that of the Indus Valley, and the lowest that of the Hills. Burma Coast had the highest admission ratios from dysentery, hepatitis, and rheumatism, and the lowest from enteric fever; Burma Inland the lowest from respiratory diseases; Bengal-Orissa the lowest from tubercle of the lungs; the Gangetic Plain the highest from venereal diseases and diseases of the integuments; the Indus Valley the highest from ague, cholera, remittent fever, heat stroke pneumonia, scurvy, and eye diseases, and the lowest from hepatitis, rheumatism, and venereal diseases; Central India the highest from influenza, small-pox and diarrhoea; Western Coast the highest from simple continued fever, and respiratory diseases other than pneumonia, and the lowest from remittent fever, dysentery, and hepatic abscess; the Hills the highest from enteric fever and tonsillitis.

Referring to the table just given, it will be seen that decennial cholera mortality was highest in Groups V., II., and VIII., and lowest in X. and I.; that for at least 11 years there has been no cholera among the European troops in Group X., Western Coast; and that in 1892 the cholera mortality of Groups VI., VII., XI., and XII b.

rose higher than the decennial ratios. It will also be seen that enteric fever mortality was highest in Groups V., VIII., VI., and lowest in X. and IV.; and that in 1892 the enteric fever mortality of all the Groups, except I., IV., and V., was higher than the decennial ratio. Of the 12 annual ratios, four were higher and eight lower than the ratio of India; that of the Indus Valley being highest, and that of Burma Coast lowest. Burma Coast had the highest death-rate from dysentery, and the lowest from enteric fever; the Indus Valley the highest from cholera, remittent fever, heat-stroke, pneumonia, other respiratory diseases and diarrhoea, and the lowest from hepatic abscess; Western Coast the highest from tubercle of the lungs and suicide; the Hill Convalescent Depôts the highest from enteric fever and abscess of the liver, Upper Sub-Himalayan coming next to them in the former disease, and Burma Coast in the latter.

The following table shows how the composition of 100 deaths varied in the groups in 1892:

Percentage in Total Deaths.

	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.
Deaths from	Burma Coast and Bay Islands.	Burma Inland.	Bengal and Orissa.	Gangetic Plain and Chittia Nagpur.	Upper Sub-Himalayan.	Indus Valley and North West Rajputana.	South-East Rajputana, Central India, and Gujarat.	Deccan.	Western Coast.	Southern India.	Hill Stations.	Hill Convalescent Depôts.
Cholera - - -	—	—	—	8.2	16.0	12.2	4.5	5.4	—	16.7	2.5	10.0
Enteric fever - - -	8.3	15.2	11.5	32.0	33.7	17.1	44.9	49.1	18.8	27.8	49.2	40.0
Remittent fever - - -	—	8.7	15.4	6.8	1.7	32.9	2.2	.9	—	—	1.7	3.3
Dysentery - - -	25.0	8.7	7.7	4.8	2.0	3.7	2.2	5.4	—	2.8	.8	6.7
Diarrhoea - - -	—	—	—	—	—	1.2	2.2	—	—	—	1.7	—
Abscess of liver - - -	33.3	4.3	15.4	13.6	4.3	1.2	7.9	3.6	6.2	13.9	5.1	11.7
Pneumonia - - -	—	—	—	2.4	4.7	4.9	3.4	1.8	6.2	—	6.8	3.3
Tubercle of the lungs - -	—	2.2	7.7	1.6	3.7	2.4	2.2	5.4	12.5	2.8	5.1	3.3
Total from all Causes	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

It shows that, viewed in proportion to the total deaths from all causes, dysentery and hepatic abscess formed more important items in Group I. than in other groups; cholera in Southern India and Upper Sub-Himalayan; enteric fever in the Hills and the Deccan; remittent fever in the Indus Valley (Peshawar outbreak); pneumonia in the Hills and Western Coast; and tubercle of the lungs in Western Coast.

Of the large garrisons with a strength of over 1,000, the following returned death-rates higher than the death-rate of the Presidencies:—

STATIONS.	Average Annual Strength in 1892.	Ratio per 1,000 of Strength.		Chief Causes of Mortality per 1,000 in 1892.								Total Number of Deaths in 1892.
		1892.	1891.	Cholera.	Enteric Fever.	Remittent Fever.	Dysentery.	Diarrhoea.	Abscess of Liver.	Pneumonia.	Tubercle of the Lungs.	
Bareilly - - -	1,127	28.39	22.12	—	16.86	—	—	—	2.66	.89	—	32
Meean Meer - - -	1,020	38.24	9.99	16.67	5.88	.98	—	—	2.94	1.96	.98	39
Peshawar - - -	1,639	56.74	20.76	7.93	5.49	32.95	2.44	—	—	1.83	—	93
Kurrachee - - -	1,055	18.96	3.65	2.84	3.79	—	—	.95	—	.95	1.90	20
Poona - - -	1,970	13.71	15.27	—	9.14	—	—	—	.51	—	—	27
Secunderabad, South - -	1,727	13.32	13.44	—	7.53	—	1.74	—	—	.58	1.16	23

Peshawar suffered from influenza, cholera, dengue, and a severe outbreak of malaria. For a short description of this malarial outbreak, see page 52.

According to the following table, issued by the Quartermaster-General in India, 14,219 men of the Bengal Army, or 32.79 per cent. of strength, were located in

the Hills on the 1st June 1892, but Quetta and Gnathong are not included in this table:—

Statement showing the Number of European Troops, &c. located in the Hills on 1st June 1892.†

NAME OF ACCOMMODATION.	Men.	Women.	Children.
Hill Depôts - - -	2,446	214	507
Regular Hill Stations - -	4,795	203	353
Temporary Locations - -	6,958	194	404
Mussoorie Summer Home -	—	—	58
TOTAL - - -	14,219*	607	1,322
Percentage to Total Strength -	32·79†	40·01†	47·23†

* As on 1st June.

† Excluding 28 men, 32 women, and 86 children of the unattached list.

‡ Excluding Gnathong and Quetta.

In December 1891 influenza began to rise again, attained a maximum in March 1892, and ceased in the following August. Influenza rose from 372 cases, 5·5 per 1,000 of strength in 1891, to 862 cases, 12·7 per 1,000 of strength. Geographical Groups VI., VII., X., IX., and XII. were attacked in both years; II., IV., and X. only in 1891; and V., VIII., and XI. only in 1892. Thirty-eight stations were attacked in 1892 against 20, and of the 38, 30 had not been attacked in the preceding year, so far at least as the European troops were concerned. The maximum of 1892 was reached in March, whereas that of 1891 was in July. The greatest number of cases occurred at Agra, Peshawar, Quetta, and Secunderabad, places widely separated from each other. In Quetta there were two outbreaks in the year, whilst the other three stations had single compact outbreaks. The returns deal, of course, only with those cases which were admitted into hospital; but medical officers state that there were many mild cases not admitted. Doubtless also in India, where fever and dysentery are so common, the diagnosis was sometimes difficult. The lowering effect of influenza, however mild, on the general standard of health was also noted. It seems certain that the minute fine bacillus discovered by Pfeiffer is peculiar to the disease. It occurs in vast numbers in the secretions of the air passages of those affected. It remains alive for about 14 days in moist sputum, but has no spores and is easily deprived of life by drying. There seems, therefore, little danger of the conveyance of the bacillus by letters, clothing, &c., but great danger of infection through the catarrhal secretions of influenza patients. Of the lower animals experimented on (horses were not included), only monkeys proved susceptible of taking the disease.

Principal diseases :
Influenza.

The amount of cholera was less than in the preceding year. There were 167 admissions against 252, and 121 deaths against 168. The permillage of admissions to strength was 2·5, and of deaths to strength 1·78, and the percentage of deaths to cases 71·0. The corresponding figures of 1891 were 3·8, 2·50, and 66·67, and of the decennium 1881–90 2·1, 1·46 and 68·11. The months most affected were April, June, August, September, and October; the greatest number of cases occurred in August and September; and there was more cholera in the second half of the year than in the first.

Cholera.

The ratios of morbidity, mortality, and fatality from cholera in the Bengal army were respectively, 3·4, 2·42, and 69·66, against 4·1, 2·78, and 67·06 in 1891, and against 2·2, 1·48, and 67·59 in the decennium 1881–90. Of the total 143 cases 56 per cent. occurred in August–October, and 36 per cent. in April–June. The stations most severely affected were Ferozepore with 27 cases and 18 deaths, Meean Meer with 26 cases and 17 deaths, and Peshawar with 21 cases and 13 deaths.

In the Madras army there were eight cases of cholera, a ratio of 0·6, against 2·2, and 7 deaths, a ratio of 0·53 against 1·58. The fatality was 87·50 against 72·41 in 1891, and 70·69 in the decennium 1881–90. There were five cases in August, of which Bellary had four.

The morbidity ratio of the Bombay army fell from 4·2 to 1·3, the mortality ratio from 2·60 to 0·94; while the fatality ratio was 75·00 against 62·26 in 1891, and 68·05 in the decennium 1881–90. Out of the 16 cases 50 per cent. occurred in August at Kirkee, Kurrachee, and Hyderabad.

It has already been mentioned that among the geographical groups the Indus Valley had the highest ratio. Next came the Upper Sub-Himalayan and the Hill Depot groups. There was no cholera in Burma Coast, Bengal-Orissa and Western Coast. The table on page 49 shows that for 1882-91 Gangetic Plain, Burma Inland, and Central India had high cholera mortalities; Burma Coast and Southern India low cholera mortalities; and that Western Coast has had no cholera at all for at least 11 years.

Small-pox. Small-pox was somewhat more prevalent. There were 18 admissions (0·3 per 1,000) and three deaths (0·04 per 1,000) against 14 (0·2 per 1,000) and one (0·01 per 1,000) in 1891. The increase was mostly in Bombay. The greatest number of cases at any one station was 3 at Mhow, and one death each occurred at Neemuch, Mhow, and South Bangalore.

Fevers Ague gave rise to about 28 per cent. of the admissions from all causes in the Army of India. The admission rate (429·1) was nearly 86 per 1,000 higher than in the preceding year. The rise of admission was in Bengal and Bombay, especially the latter, but mortality rose in all three Presidencies. The most malarious groups in 1892 were Indus Valley, Central India, and Upper Sub-Himalayan, and the least malarious Southern India and Burma Coast.

The admission and death ratios from remittent fever rose respectively from 6·8 and 0·42 to 13·1 and 1·10. All the Presidencies, but especially Bengal, participated in the increase of admission. Mortality in Bengal was much increased, in Bombay increased, and in Madras much decreased. The highest ratio was that of Indus Valley group, and the lowest that of Western Coast group. There was a great outbreak of malaria at Peshawar, of which the following is a short account by the medical officer in charge, Brigade-Surgeon Lieutenant-Colonel Brown:

The malarial fever was of a specially severe type, and prevailed mostly during the months of September, October, November, and December. In this period there were 54 deaths from remittent fever, and in the early cases it was extremely difficult to diagnose them from cholera; the patient being attacked with purging, vomiting, cramps, suppression of urine, quickly followed by collapse. At the *post-mortem* examinations the liver and spleen were found greatly congested, the latter organ weighing in some cases from 30 to 40 ounces. The cause of this unusual sickness was generally attributed to the heavy rainfall in the months of July and August. Seventeen inches of rain were recorded during these two months, or more than the whole yearly average, and of this the greater part fell in the early part of August. There is no record of a similar rainfall in the Peshawar Valley for these two months.

For India the admission rate from simple continued fever rose from 49·3 to 61·9, while there were three deaths against one. Each Presidency returned one death, and all had increased admission rates. The Western Coast group had the highest ratio, and Bengal-Orissa the lowest. Medical officers frequently note that many of the cases returned as simple continued fever are in all probability really mild cases of enteric fever with symptoms too indefinite to justify a diagnosis of the more serious malady. Medical officers differ in practice as to where they draw the line between simple continued fever and enteric fever.

Enteric fever.

The experimental results of Sanarelli and of Chantemesse and Widai, reported in the *Annales de l'Institut Pasteur* (25th November 1892), are of practical importance. These observers, although they found, in opposition to the Lyons school, that the *bacillus coli communis* preserved its identity under all circumstances, and did not tend to merge into the typhoid bacillus, discovered nevertheless that the *bacillus coli* was capable of exercising an important influence on the origin and on the progress of enteric fever. As long as the intestinal canal is in a healthy condition, the *bacillus coli* is harmless, and is non-pathogenic for animals; but there are numerous observations from all parts of the world to show that when the resisting power of the intestinal wall is lowered, and multiplication of the microbe is favoured by circumstances, the *bacillus coli* is capable of setting up pathological processes of all degrees of severity both within and beyond the intestinal canal, and becomes pathogenic for animals. But the important observation of the above experimenters is that the soluble products of *bacillus coli*, as well as of the *proteus vulgaris*, the *streptococcus*, etc., bring about both in the intestine and in the body a state of matters very favourable to the virulent action of the typhoid bacillus; so that abnormal activity of the *bacillus coli* may, on the one hand, determine that a patient shall have an attack of enteric fever, if the typhoid bacillus enter his body at that moment, or is already there; or, on the other hand, may bring about a relapse in

a case in which the tissues of the body had almost gained the victory over the typhoid bacillus. It is also known that in the course of enteric fever the *bacillus coli* multiplies greatly in the intestine. Of special interest it is to Indian medical officers that Sanarelli found that long exposure to humid heat produces functional disorders of the abdominal organs, and especially of the intestinal canal, and favours a certain degree of self-poisoning, that renders the animals more sensitive to certain infections. He found that animals which had been so exposed rapidly succumbed to attenuated virus; whereas the same attenuated virus had no effect on the control animals which had not been so exposed. He considers that this self-poisoning and increased susceptibility are partly caused, not only by the check to radiation and the want of oxygenation, but also by the enormous multiplication of the *bacillus coli*, which, if the exposure continues, is capable of invading the whole body, and producing therein a true, specific, general infection of its own. It would be interesting to know the results of experiments with dry heat. One of the practical applications of these observations is the importance of personal hygiene, as well as of general measures of sanitation, the necessity, besides placing the young newly-arrived soldier in clean surroundings, of taking care that his intestinal canal is not allowed to fall into an abnormal condition; so that if Eberth's bacillus does gain an entrance into his intestinal canal it shall meet with no encouragement there. Initial constipation in the enteric and other fevers of India is common. Here attention may be drawn to an article on "Enteric-Septic Fevers" by Surgeon-Captain Ross in the *Indian Medical Gazette* of August 1892. Another interesting result, attained by the French observers, was that no matter how the bacillus was introduced into the body of the animals experimented on, the small intestine was always affected. This shows that the constant affection of the ileum in man is no proof that he always takes the bacillus in by his mouth, though other circumstances render that probable. In the investigation of outbreaks the possibility of other modes of ingress should, therefore, not be lost sight of. Again, Chantemesse and Widai, noticing that anything that enfeebles the individual, whether by self-poisoning or by poisoning from without (under which heads might, no doubt, be included fatigue, chill, exposure, dietetic errors, &c.) favours the invasion of the typhoid bacillus, go on to say that the action of impure water in causing the appearance of enteric fever is probably similar: it disorders the bowels, lowers the resisting power of the economy, and favours the multiplication of the intestinal microbes, rendering the body an easier prey to any typhoid bacilli that may find an entrance. At any rate, observers of different nationalities are agreed that the presence of the *bacillus coli* in water, even though the typhoid bacillus itself may not be found, is sufficient to condemn the water; because it suggests faecal contamination, and therefore risk of typhoid-stool contamination. This is all the more fortunate as experience has more and more shown that the identification of the typhoid bacillus in water is a matter of the utmost difficulty and delicacy, only to be undertaken by a thoroughly qualified expert in a laboratory. A whole series of morphological, biological, and chemical tests have to be carried out before a conclusion of any certainty can be arrived at; and reports of the finding of the bacillus in water, made in former times of less knowledge, are now looked upon with doubt. The practical conclusion of the whole matter is an old one, that to protect the men of the Army of India from enteric fever it is necessary to have soldiers clean and well cared for in every respect, internally as well as externally, placed in clean surroundings, and to extend the area of cleanliness far beyond cantonment limits, in fact ultimately throughout the length and breadth of India. It is a good thing to secure the cleanliness of the immediate environment of the troops, but they will never be safe as long as the native population and its towns and villages are left uncleansed to act as a reservoir of dirt and disease.

With regard to the question of the identification of Indian fevers, the researches of Surgeon-Captains Bruce and Hughes on "Malta Fever" are of great interest (*Practitioner*, September, 1887; *Lancet*, 3rd December 1892; *Annales de l'Institut Pasteur*, 25th April 1893, and 25th August 1893). This is a form of fever common on the shores of the Mediterranean, having resemblances both to enteric fever and to malarial fever, but distinct from both, due to a specific micrococcus, and supposed to be connected with faecal insanitation. In this connexion the following remarks of the medical officers of Wellington Depot are suggestive:—

The outbreak of simple continued fever occurred shortly after the arrival of the Royal Scots from Malta As the Royal Scots show a greater number of admissions, viz., 61 per cent. of the whole, it is probable that climate, age, and immediate previous service in Malta are important elements in its causation. Six only out of 40 admissions occurred among men who joined direct from England.

Lastly, if it be true, as has been reported, that cholera bacilli have been found in the stools of people living in the midst of cholera, but not themselves affected, or only slightly so, and if, in the same way, the typhoid bacillus can also pass through the healthy or comparatively healthy body, one explanation is suggested why the origin of cases is sometimes mysterious.

There was an increase of morbidity, but a decrease of mortality from enteric fever in 1892. As compared with the corresponding ratios of 1881, the admission (22.1) and death (5.52) ratios for enteric fever respectively rose by 1.7 and fell by 0.21 per 1,000 of strength. There were 1,509 admissions and 376 deaths in 1892, against 1,366 and 384 in 1891.

The following table shows the admission and death-rates from enteric, and from intermittent, remittent, and simple continued fevers for two decennia, and for the last two years :—

PERIOD.	BENGAL.						MADRAS.						BOMBAY.					
	Admissions per 1,000.			Deaths per 1,000.			Admissions per 1,000.			Deaths per 1,000.			Admissions per 1,000.			Deaths per 1,000.		
	Enteric fever.	Ague, remittent, and simple continued fevers.	Total.	Enteric fever.	Ague, remittent, and simple continued fevers.	Total.	Enteric fever.	Ague, remittent, and simple continued fevers.	Total.	Enteric fever.	Ague, remittent, and simple continued fevers.	Total.	Enteric fever.	Ague, remittent, and simple continued fevers.	Total.	Enteric fever.	Ague, remittent, and simple continued fevers.	Total.
1870-79* -	5.3	607.3	612.6	2.28	1.74	4.02	3.9	266.5	270.4	1.42	0.62	2.04	3.1	659.9	663.0	1.75	1.14	2.89
1881-90†	15.2	536.0	551.2	4.38	0.59	4.92	9.0	254.6	263.6	2.73	0.91	3.64	10.0	486.6	496.6	3.07	0.85	3.92
1891 -	24.9	416.3	441.2	6.64	0.56	7.20	10.8	327.3	338.1	3.08	1.21	4.29	15.7	424.8	440.5	5.58	0.16	5.74
1892 - -	20.8	552.1	572.9	6.40	1.85	8.25	11.9	239.7	351.6	3.18	1.06	4.24	17.5	620.0	637.5	5.03	0.40	5.43

* Including troops on active service and on the march.

† Excluding Bengal and Bombay troops in Afghanistan during 1881.

The table shows the increase in the diagnosis of enteric fever; but also, especially by the rising mortality, a real increase of enteric fever. The following table contains mortalities only :—

		DURING 1870-79.			DURING 1881-90.			DURING 1891.			DURING 1892.		
		Enteric Fever.	Other Fevers.*	Total of both.	Enteric Fever.	Other Fevers.*	Total of both.	Enteric Fever.	Other Fevers.*	Total of both.	Enteric Fever.	Other Fevers.*	Total of both.
Army of India†	-	2.08	1.42	3.45	3.79	0.70	4.49	5.73	0.61	6.34	5.52	1.42	6.94
„ Bengal‡	-	2.28	1.74	4.02	4.38	0.59	4.92	6.64	0.56	7.20	6.40	1.85	8.25
„ Madras†	-	1.42	0.62	2.04	2.73	0.91	3.64	3.08	1.21	4.29	3.18	1.06	4.24
„ Bombay‡		1.75	1.14	2.89	3.07	0.85	3.92	5.58	0.16	5.74	5.03	0.40	5.43

* Intermittent, remittent, and simple continued fevers.

† Excluding troops on active service in Burma during 1885 to 1887.

‡ Excluding troops in Afghanistan during 1881.

It shows that in the last ten years, and especially of recent years, there has been an increase in total fever mortality, usually ascribed to the greater youthfulness and recent arrival of the soldiers of to-day; and an increase of mortality from enteric fever, accompanied by a decrease in mortality from the other fevers, which is probably partly due to increased susceptibility on the part of the army, from youth and recent arrival, and partly due to the greater frequency with which the diagnosis of enteric fever is now made.

The following table shows enteric fever in the geographical groups in the decennium 1882-91, and in the last two years :—

	I.		II.		IV.		V.		VI.		VII.	
	Ad-mitted.	Died.	Ad-mitted.	Died.	Ad-mitted.	Died.	Ad-mitted.	Died.	Ad-mitted.	Died.	Ad-mitted.	Died.
1882-91 - -	4.1	2.37	4.7	2.31	5.4	2.09	24.3	5.87	18.6	5.33	12.5	3.69
1891 - - -	3.7	3.08	8.5	4.43	10.9	4.98	31.3	6.55	31.1	8.73	12.1	4.11
1892 - - -	3.7	.62	7.3	2.85	5.7	1.32	24.1	5.45	26.5	7.41	17.1	5.43
Percentage of deaths to cases in 1892 }	16.67		36.84		21.43		18.26		22.80		30.43	

	VIII.		IX.		X.		XI.		XIIa.		XIIb.	
	Ad-mitted.	Died.	Ad-mitted.	Died.	Ad-mitted.	Died.	Ad-mitted.	Died.	Ad-mitted.	Died.	Ad-mitted.	Died.
1882-91 - -	17.4	5.66	12.0	3.71	4.5	1.71	10.9	2.66	18.4	4.44	10.7	3.67
1891 - - -	25.9	6.99	13.3	4.43	2.3	—	19.6	4.19	21.3	5.84	16.3	8.93
1892 - - -	20.3	6.62	22.7	5.72	5.1	2.17	14.9	2.86	36.0	6.31	22.3	9.08
Percentage of deaths to cases in 1892 }	28.99		23.81		37.50		15.38		17.42		40.00	

In the decennium Groups V., VI., and XIIa. had high admission and death-rates, and Groups I., II., IV., and X. low rates. In the year 1892 also the same groups had high and low rates. All the groups except I. and V. had increased admission and death-rates in 1892, and the reduction in the admission-rate in Group V. was very small.

The following table shows those garrisons of India which had an average strength of over 1,000 in 1892, with their decennial ratios from enteric fever for reference :—

ENTERIC FEVER IN THE DECENNIAL 1882-91 AND IN 1892.

Stations over 1,000 strong.

Stations.	Decennium 1882-91.		Admission-rate per 1,000 of Strength in 1892.	Death-rate per 1,000 of Strength in 1892.	Died out of each 100 Cases treated in 1892.
	Admission-rate.	Death-rate.			
Bareilly - - -	34.2	8.67	44.4	16.86	28.79
Lucknow - - -	32.7	5.62	29.6	6.45	16.67
Sialkot - - -	32.1	8.13	52.4	9.87	16.25
Kurrachee - -	22.4	4.00	23.7	3.79	16.00
Rawalpindi - -	19.9	5.34	26.8	8.69	27.91
Secunderabad -	19.4	5.40	23.5	5.33	21.74
Mhow - - -	19.2	5.31	13.9	1.89	12.50
Meean Meer - -	19.0	5.75	14.7	5.88	37.50
Bangalore - -	18.1	3.66	17.0	2.06	9.30
Meerut - - -	15.9	4.93	23.0	6.18	19.64
Quetta - - -	14.0	3.67	30.7	3.62	11.76
Agra - - -	13.9	4.46	15.5	6.01	38.89
Umballa - - -	10.6	2.49	21.9	4.69	18.00
Poona - - -	10.5	3.58	31.0	9.14	26.87
Peshawar - - -	10.4	4.33	11.0	5.49	47.37
Colaba (Bombay) -	4.6	1.59	4.9	1.95	40.00
Fort William - -	3.7	2.21	2.7	—	—
Belgaum - - -	2.9	1.19	1.8	.90	50.00

The high position occupied by the decennial ratios of Bareilly, Lucknow, and Sialkot will be observed; and the low position of the ratio of Fort William. Among the decennial death-rates, those of Bareilly and Sialkot were highest. In 1892, Bareilly and Sialkot had the highest admission and death-rates, and Belgaum and Fort

William the lowest. Nineteen stations had no enteric fever. Of these, Port Blair, Satara, Sitabildi, Butcher's Island, Pallavaram, Gnathong, Kuldunnah, Ramandroog, and Khandalla had also had no enteric fever in 1891; and of these again, Satara, Pallavaram, Gnathong, Kuldunnah, Ramandroog, and Khandalla had also had none in 1890.

The following table shows the greater liability of the young soldier to die from enteric fever, and the decreasing liability with advancing age:—

Statement showing the Death Ratios of the European Army from Enteric Fever at different Ages, together with the Ratios of Liability to it.

YEAR.	MORTALITY FROM ENTERIC FEVER AND RATIO OF LIABILITY TO IT AT DIFFERENT AGES.					
	24 and under.		25 to 29.		30 to 34.	
	Deaths per 1,000.	Percentage of liability.	Deaths per 1,000.	Percentage of liability.	Deaths per 1,000.	Percentage of liability.
1889	9·81	64·50	3·25	21·37	1·83	12·03
1890	7·78	65·93	2·84	24·07	1·18	10·00
1891	9·11	68·65	2·97	22·38	·71	5·35
1892	8·44	64·87	2·92	22·44	1·65	12·68

Again, the following shows that the recently arrived soldier is more apt to die from enteric fever than he who has been longer in the country, and that with increased length of service in India, the liability to death from enteric fever rapidly diminishes:—

Statement showing the Death Ratios of the European Army from Enteric Fever at different Periods of Residence in India, together with the Ratios of Liability to it.

YEAR.	MORTALITY FROM ENTERIC FEVER, AND THE RATIO OF LIABILITY TO IT AT DIFFERENT PERIODS OF RESIDENCE IN INDIA.					
	1st and 2nd Years.		3rd to 5th Year.		6th to 10th Year.	
	Deaths per 1,000.	Percentage of liability.	Deaths per 1,000.	Percentage of liability.	Deaths per 1,000.	Percentage of liability.
1889	11·65	57·02	4·20	20·56	2·43	11·89
1890	10·21	66·47	2·98	19·40	2·17	14·13
1891	11·60	64·19	3·64	10·14	2·23	2·34
1892	10·69	65·99	3·56	20·74	2·15	13·27

As in former years, the medical officers were usually unable, even to their own satisfaction, to trace out in any given outbreak a definite insanitary condition to which the outbreak might with certainty be attributed. Most medical officers lay stress on the influence of climate acting on young and unseasoned soldiers; some noting that increase of disease in a station is connected with the arrival of drafts from the old country, and that these bodies of men afterwards gradually become "acclimatised." In certain cases, from what is known of the period of incubation of enteric fever, it was believed that these drafts had imbibed the active cause of the disease on their way inland from the port of landing. Most medical officers suspect strongly the bazaar supplies, especially the bazaar drinks, obtained privately by the men; and also impure water drunk casually by the men out walking or on the march. In the case of a body of men marching up to Dalhousie the medical officer saw a man drink from a dirty puddle on the roadside, and the attack of enteric fever which this man afterwards underwent was thought to be connected therewith. Many of the cases of enteric fever treated in the hill-stations were apparently contracted on the march up from insanitary conditions encountered *en route*. In several cases chill or exposure to the sun, especially if combined with fatigue, as is apt to be the case at rifle ranges and camps of exercise, is mentioned as at least a pre-disposing cause; and it is the opinion of one medical officer that the so-called enteric fever of India is nothing but a more severe development of the simple continued fever which is apt to follow such exposures. The medical officer at Sialkot considers that there is surface and sub-soil pollution favouring the presence of the disease, the seasonal activity of which is regulated by meteorological conditions. In some cases the state of the conservancy was found fault with, but no definite connexion was

established between the defect and the occurrence of the fever. The possibility of the causative activity of infective dust is *directly* noticed by only a few medical officers. At Quetta it was pointed out that the night-soil trenches are to the west of the cantonment, and that the frequent dust-storms come from the same direction. Here it may be noted that in the *Zeitschrift für Hygiene* of 12th May 1893, Professor Pfuhl describes how in the investigation of an epidemic in a certain circumscribed community he was led to conclude that the second case of the series was due to wind-borne sand infection. But it is only recently-infected dust that can be active, because it has been found that the typhoid bacillus in dejecta or other media, when exposed on the *surface* of the ground to the full force of meteorological influences, soon dies. The filter in one of the barracks at Pachmarhi from which cases were admitted was found in a foul condition. In the case of Kasauli, Poona, Kirkee, and Pachmarhi, the water-supply was considered to be more or less open to the suspicion of probability of contamination. On the whole, great care seems to have been exercised in supervising the milk-supply, though the difficulties, one of which is the indifference of the men themselves, were great. At Campbellpur, Bhagsu, and Quetta the connexion of cases with dirty milk was suspected or asserted, but there was no complete proof thereof. As a rule, cases seemed to come from the various barracks of a station without preference; and where there seemed to be a preference for a particular room or barrack, the cause of the preference was not discovered, unless, possibly, in the dirty filter at Pachmarhi and in the greater height of the ground-water at the cavalry barracks of Sialkot. Out of the 1,509 cases of enteric fever which occurred throughout the army of India in 1892, about 34 declared themselves among men already in hospital, either as patients or as attendants, or in men who had just left hospital; out of these, 15 were in hospital for venereal diseases, 8 were in hospital for other diseases, and 11 were orderlies in attendance on enteric fever cases. The suspicion in these last cases was that from want of observing the proper precautions of cleanliness they got the disease from the sick through the medium of their excretions. At Dagshai a sweeper who removed the excreta from the enteric ward is said to have died from enteric fever. It must be remembered that the station in which a case is admitted is not always the station in which the disease was contracted; for medical officers frequently noted, especially in the case of the hill stations, that the disease must have been contracted before arrival, either from impurities encountered on the march, or from a cause existing in the previous station. Delhi, Mallapuram, Rangoon, Aden, and Satara are said to be stations where enteric fever is rare, and the medical officer of Satara considers this an argument against the climatic origin of Indian enteric fever. Muttra is said to have escaped on account of its good sanitation; Attock because its night-soil trenches are 2 miles away from the barracks. A diminution of enteric fever at Roorkee and at Nasirabad was thought to be connected with the bazaars having been placed out of bounds on account of the prevalence of cholera and small-pox. The medical officer at Allahabad draws attention to a form of dysentery of the ascending colon which is difficult to distinguish from enteric fever; but the great diagnostic difficulty which medical officers note is the drawing of the line between enteric fever and simple continued fever. Many medical officers, recognising the peculiar danger of mild cases as spreaders of the disease, as well as wishing to err on the safe side for the sake of the patients themselves, are in the habit of treating all cases of continued or remittent fever as enteric fever, until they seem to have proved their innocence. Lastly, most medical officers in investigating an outbreak examine or discuss in succession each source of infection that can be thought of—not only for the first case, but for each individual successive case.

In the case of four patients it is noted that they had previously gone through an attack of the disease, one in Dublin and the others in India. At Agra, it is mentioned, the first cases of the outbreak were more severe than those that followed. The finding of rose spots was very frequently reported both from hill and from plains stations. The presence or absence of albuminuria was not noted in any of the "Medical Transactions." As usual, certain of the *post mortem* records were scarcely typical of the disease.

The death-rates from dysentery and from diarrhœa in the army of India were raised, the former from 0·45 per 1,000 in 1891 to 0·63 in 1892, and the latter from 0·07 to 0·09. Dysentery was most prevalent in the Madras army, least so in the Bombay army. In Bengal the admission rate was higher, whereas in Madras and Bombay it was lower. In no Presidency was the admission ratio higher than that of the 1882–91 decennium. Mortality from dysentery was highest in the Madras army (1·29), lowest in the Bombay army (0·08). In Bengal (0·63) and Madras the

Bowel complaints.

ratio was higher than that of the previous year, and than that of the decennium 1882-91.

Hepatitis.

From hepatitis the admission rate (19 per 1,000) remained the same, but the death-rate rose from 1·07 to 1·19. Both ratios were, however, comparatively low. The admission ratio of Madras was, as usual, higher than that of the other presidencies, but the death-rate of Bengal was highest. The Bombay ratios were lowest. All the ratios of 1892, except the death-rate of Bengal, were lower than the corresponding ratios for the decennium 1882-91.

Respiratory diseases.

That there was an increase in respiratory morbidity and mortality was due to the revival of the influenza epidemic. Bengal had the highest admission rate (40 per 1,000), Bombay the lowest (27), while in Madras it was 30 per 1,000. In Bengal and Madras the admission ratios were higher than in 1891, and than the ratio of 1886-91. Bengal had the highest mortality (1·07), Madras the lowest (0·38), Bombay returned 0·47. In Bengal only was the mortality higher than in the preceding year, and than the ratio of 1886-91. The greatest prevalence of respiratory diseases was in the Western Coast, Indus Valley, Burma Coast, and Bengal-Orissa.

The admission and death-rates from pneumonia for the whole army were 3·5 and 0·62 per 1,000 respectively. All the presidency admission rates showed an increase, except that of Madras, but the death-rates of Madras and Bombay were lowered.

Venereal disease.

The "investigation into the venereal statistics of many years back," referred to in last year's report, was contained in a memorandum submitted to Government by the Principal Medical Officer, Her Majesty's Forces in India. One of the principal points sought to be brought out in it was that it is a misleading way of putting it to say that in spite of Lock Hospitals venereal disease increased, and that the real fact is that from some cause, probably the short service system, venereal disease increased generally, but less where there were Lock Hospitals than where there were none. But if the Lock Hospitals really possessed anything like the protective power that was expected from the institution of them, it is reasonable to expect that no cause or influence should have prevailed against them. Nor should they, if the working of them reached all those persons against whom it was intended to protect the troops. It has long been recognised by persons conversant with their management that such was not the case, and probably could not in practice ever be made the case. To this, therefore, and not to any inherent defect in the constitution of them, should be attributed the failure of the Lock Hospitals to check the increase of venereal disease among the troops, who from being younger men, and from restriction of marriage, exposed themselves to risks of contagion much more freely than the men of the older army.

Medical officers now take a much less sanguine view of the good to be effected by the voluntary venereal arrangements in connexion with the cantonment hospitals, because they find that the women, having quite come to realise that no one can force them to come and be cured, have nearly given up attending.

At all the cantonment hospitals of the Bengal Presidency, intended to serve an enormous native population, there were treated only 77,139 patients, of whom only 5,645 were in patients, and only 4,723 were suffering from venereal disease. The venereal patients have been in-patients or out-patients, males or females, prostitutes or not. The hospitals have now been placed on a different footing, more in line with the charitable dispensaries maintained under civil administration. The statistics are of no value for study in connexion with those of the European troops.

Venereal disease caused *directly* 27 per cent. of the admissions, 0·77 per cent. of the deaths, and 13 per cent. of the invaliding of the Army of India. The admission rate rose 9 per 1,000 of strength above that of 1891. The rise was confined to Bengal and Madras, the ratio of Bombay being reduced.

Admissions from Venereal Diseases in the three Presidencies.

PRESIDENCY.	ADMISSIONS PER 1,000.											
	1870-79.	1881-90.	1882-91.	1884.	1885.	1886.	1887.	1888.	1889.	1890.	1891.	1892.
Bengal* - -	209	366	377	291	363	394	356	373	491	504	395	412
Madras - -	198	367	380	307	350	394	400	376	452	491	402	415
Bombay* - -	191	339	354	292	272	370	337	357	481	515	417	396
India† - -	203	360	371	294	343	389	361	371	482	504	401	410

* Excluding troops in Afghanistan during 1881.

† Including troops in Afghanistan during 1881.

The year 1884 was the last year in which the Contagious Diseases Acts were in full force. The following table compares the venereal statistics of 1884, 1891, and 1892:—

ARMY OF INDIA.
Venereal Admissions of 1884, 1891, and 1892 compared.

VENEREAL DISEASES.	1892.		1891.		1884.*	
	Strength 68,137.		Strength 67,030.		Strength 55,349.	
	Admissions into Hospital.	Ratio per 1,000.	Admissions into Hospital.	Ratio per 1,000.	Admissions into Hospital.	Ratio per 1,000.
Primary syphilis -	6,991	102·6	6,971	104·0	4,992	90·2
Ulcer of penis -	3,987	58·5	3,700	55·2		
Secondary syphilis -	3,940	57·8	4,024	60·0	1,352	24·4
Gonorrhœa -	10,829	158·9	10,066	150·2	8,070	145·8
Other venereal diseases	2,180	32·0	2,101	31·3	1,835	33·2
Total -	27,927	409·9	26,862	400·7	16,249	293·6

* From Annual Returns.

Regarding only the ratios to the right of the brackets, it appears that all the ratios of 1891 and 1892 were higher than those of 1884.

In the Army of Bengal venereal disease caused *directly* 26 per cent. of the admissions, 0·81 per cent. of the deaths, and 10 per cent. of the invaliding. The admission rate rose about 17 per 1,000 of strength over that of 1891. In the Army of Madras venereal disease caused *directly* 34 per cent. of the admissions, 0·61 per cent. of the deaths, and 23 per cent. of the invaliding. The admission rate rose about 13 per 1,000 of strength above that of 1891. In the Army of Bombay venereal disease caused *directly* 25 per cent. of the admissions, 0·61 per cent. of the deaths, and 8 per cent. of the invaliding. The admission ratio fell about 21 per 1,000 below that of 1891.

In the whole army of India 1,661 men were invalided, or 24·37 per 1,000 of average strength, against 1,793 and 26·78 in the preceding year. The ratio for 1892 was 2·98 per 1,000 less than that of the decennium 1881-90, which was 27·35. The proportion of invalids to strength was lowest in Bombay, highest in Madras.

Forty per cent. of the total number invalided were discharged as unfit for further service. This proportion, as may be seen from the following table, was rather higher than of late years. In Bengal and Bombay the proportion of discharge was greater than in the previous year, while in Madras it remained the same. The proportion was highest in Bombay, and was there unusually high.

Percentage of those Invalided for Discharge to Total Number Invalided.

	1888.	1889.	1890.	1891.	1892.
Army of India -	39	37	35	34	40
" Bengal -	40	37	23	34	40
" Madras -	43	46	43	36	36
" Bombay -	29	25	32	33	45

In the following table the ratios of admission, death, and invaliding in the three armies are given side by side:—

Admission, Death, and Invaliding Rates in the three Presidencies.

YEAR.	BENGAL.*			MADRAS.			BOMBAY.*		
	Admissions per 1,000.	Deaths per 1,000.	Invaliding per 1,000.†	Admissions per 1,000.	Deaths per 1,000.	Invaliding per 1,000.†	Admissions per 1,000.	Deaths per 1,000.	Invaliding per 1,000.†
1870-79 -	1,522	21·00	41·40	1,264	17·69	48·71	1,533	15·27	42·79
1881-90 -	1,552	14·48	25·89	1,257	12·99	27·59	1,431	13·90	32·00
1890 -	1,584	15·50	25·05	1,442	12·84	22·68	1,396	9·56	28·87
1891 -	1,394	16·86	24·64	1,304	14·49	31·28	1,409	14·24	28·98
1892 -	1,582	19·81	22·57	1,236	12·32	33·05	1,593	12·90	21·33

* Excluding troops in Afghanistan during 1881.

† Calculated on the strength derived from annual returns.

The follow table shows the diseases which caused invaliding of not less than 1 per 1,000 of strength:—

BENGAL.		MADRAS.		BOMBAY.	
Diseases.	Invaliding Rates.	Diseases.	Invaliding Rates.	Disases.	Invaliding Rates.
Debility - - -	3·15	Syphilis and gonorrhœa - -	7·19	Debility - - -	4·25
Syphilis and gonorrhœa - -	2·16	Debility - - -	3·63	Syphilis and gonorrhœa - -	1·74
Malarial fevers - - -	1·85	Rheumatism - - -	2·42	Injuries - - -	1·50
Tubercle of the lungs - -	1·35	Dysentery - - -	2·34	Malarial fevers - - -	1·50
Mental affections - - -	1·35	Malarial fevers - - -	1·58	Tubercle of the lungs - -	1·26
Rheumatism - - -	1·16	Other nervous diseases - -	1·43	Mental affections - - -	1·10
Hepatitis - - -	1·16	Mental affections - - -	1·36	Hepatitis - - -	1·10
Dysentery - - -	1·04	Hepatitis - - -	1·36		
		Tubercle of the lungs - -	1·13		

Debility and venereal diseases head the list in all three Presidencies. There was an increase in the ratio of invaliding from mental disease in the army of India, and in Bengal, while there was a decrease in Madras and Bombay. There were 46 cases of melancholia, 30 of dementia, and 9 of mania.

The percentage of men who were invalided while under 25 years of age, to the whole number invalided, was 53·41 for the army of India, against 54·01 in the preceding year. The percentage of men under 25 in the strength of the Army of India was 51, as in the previous year.

Of the total number of men invalided 35 per cent. were of less than two years' service, and 77 per cent. were of less than five years' service. With this is to be considered the fact that 79 per cent. of all the men in the strength of the army in 1892 were of less than five years' service.

The percentage to total invaliding of invaliding in the first four years of Indian service was 48 in the period 1871-75, 68 in the period 1881-85, 68 in the period 1886-90, and 65 in 1892; while the percentage of men invalided in the first four years of service who were under 30 years of age has risen from 73 in 1871-75 to 96 in 1892. Of the men invalided under four years of Indian service in 1892, 72 per cent. were also under 25 years of age.

Statistics of
Women.

The average strength of women remaining the same, the ratios of sickness and mortality rose to an unusual height.

Strength, Sickness and Mortality of Women in the Army of India.

YEARS.	Average Annual Strength.	Admission-rate per 1,000.	Constantly sick-rate per 1,000.	Death-rate per 1,000.
1881-90 - - -	3,352	837·5	30·6	18·86
1882-91 - - -	3,291	812·1	29·8	17·59
1891 - - -	3,137	748·8	27·1	14·03
1892 - - -	3,101	904·2	35·8	19·03

The chief causes of admission were debility, ague, and the diseases peculiar to women. Among the chief diseases which caused increased admission were influenza, small-pox, simple continued fever, pneumonia, other respiratory diseases, debility, spleen diseases, malarial fevers, and cholera; while there was a diminution in enteric fever, dysentery, puerperal affections, and entozoa. The admission rate from influenza rose from 1·9 to 5·5. In the Bengal Presidency the admission rate from all causes was 891·0, in Madras 973·6, and in Bombay 852·5; all showing an increase as compared with the previous year. Bengal had the highest ratio for cholera, puerperal affections, and diarrhœa; Madras the highest for influenza, enteric fever, respiratory diseases, tubercle of the lungs, debility, dysentery, rheumatism, entozoa, and diseases peculiar to women; and Bombay the highest for ague. The constantly-sick rate was highest in Madras, lowest in Bombay.

The mortality ratio among women in 1892 is the highest mortality ratio in the above table. The chief causes of death were, in order, puerperal affections, cholera, enteric fever, ague, pneumonia, and other respiratory diseases. The chief increase of mortality was in ague, respiratory diseases, and tubercle of the lungs; and the chief

decrease in nervous and circulatory diseases. In the Bengal Presidency the death-rate was 24·40, in Madras 13·21, and in Bombay 10·29; all higher, especially Bengal, than the ratios of 1891. Bengal had the highest ratio for cholera, dysentery, hepatic abscess, enteric fever, diarrhoea, puerperal affections, and heatstroke; Madras the highest for pneumonia; and Bombay the highest for remittent fever. Madras had no deaths from bowel complaints or hepatitis; Bombay none from enteric fever, respiratory diseases, bowel complaints, or hepatitis. In Bengal the chief increase was in ague and respiratory diseases; in Madras in fevers, respiratory diseases, and puerperal affections; in Bombay in puerperal affections and malarial fevers.

The decline in the average strength of children continued. Sickness was greater, but mortality was somewhat reduced. Statistics of Children.

Strength, Sickness and Mortality of Children in the Army of India.

YEARS.	Average Strength.	Admission-rate per 1,000.	Constantly sick-rate per 1,000.	Death-rate per 1,000.
1881-90	6,286	633·5	23·4	50·22
1882-91	6,220	609·4	22·2	50·63
1891	5,886	509·0	19·2	49·27
1892	5,762	564·6	22·0	48·59

The chief causes of admission were ague, respiratory diseases, and debility. The greatest increase of admission was in influenza, remittent fever, simple continued fever, and pneumonia, and the greatest decrease in cholera, bowel complaints, and entozoa. In the Bengal Presidency the admission rate was 516, in Madras 656, and in Bombay 586; Madras only having a lower ratio than in the previous year.

The mortality among children, though lower than in 1891, was higher than in 1889 or 1890. The chief causes of death were, in order, convulsions, debility, diarrhoea, respiratory diseases, croup and diphtheria, teething, remittent fever, and tubercle. The greatest increase of mortality was in diphtheria and croup, enteric fever, remittent fever, and simple continued fever; and the greatest decrease in measles, tubercle of the meninges and brain, teething, dysentery, and diarrhoea. In the Bengal Presidency the death ratio was 57·01, in Madras 30·30, and in Bombay 47·62; Bengal being the only Presidency which had a higher death-rate than in the previous year, and Madras showing the greatest decrease.

Native Troops.

While sickness in the Native Army of India was increased by the prevalence of influenza and malaria, mortality was reduced. The cholera mortality, though still high, was less than in the preceding year. Sickness and mortality in 1892.

Sickness and Mortality of the periods 1877-81, 1881-90, and 1882-91, and of the years 1891 and 1892.

YEAR.	Average Annual Strength present.	RATIO PER 1,000.				
		Admissions into Hospital.	Constantly Sick.	DEATHS FROM		Mortality, including absent Deaths.
				Cholera.	All Causes.	
1877-81	118,669	1,422	48	1·94	24·90	27·40
1881-90	116,712	1,054	35	1·28	13·44	16·91
1882-91	118,111	1,020	34	1·45	13·09	16·61
1891	128,600	972	35	2·64	15·44	19·34
1892	127,355	1,092	37	2·14	14·97	18·67

The chief causes of admission were ague, diseases of the integuments, injuries, and dysentery. Among the diseases with raised admission rates were influenza, small-pox, "other fevers," respiratory diseases, and ague. Among those with lessened rates were cholera, diarrhoea, and guinea-worm. Ague caused 48 per cent. of the total admissions.

The chief causes of death were pneumonia, cholera, and remittent fever. Among the diseases which caused increased mortality were tubercle of the lungs, dysentery, and hepatitis. Among those from which mortality was lessened were suicide, ague, diarrhoea, and cholera. Pneumonia caused 22 per cent. of the total deaths, and cholera 14 per cent.

The chief causes of invaliding in the Native Army were debility, rheumatism, malarial fevers, and respiratory diseases.

If the statistics of native troops be compared with those of European troops, it will be seen how much less the Native soldier suffered from enteric fever, simple continued fever, heatstroke, nervous diseases, circulatory diseases, tubercle of the lungs, tonsillitis, diarrhoea, hepatitis, rheumatism, venereal diseases, injuries, and how much more he suffered from influenza, cholera, small-pox, ague, pneumonia, other respiratory diseases, dysentery, spleen diseases, scurvy, eye diseases, entozoa, and diseases of the integuments, than his European comrade.

In page 43 explanations regarding decennial statistics will be found. In the case of the Native Army it is necessary to confine the comparison of decennia to the Bengal Army, as there are no available records going far enough back for the other corps. The following tables are therefore for the Bengal Army only. They show that sickness for the decennium 1881-90 was lower than in either of the other decennia, while mortality, which was higher in 1870-79, sank again in 1881-90 :—

Admitted per 1,000 of Strength.

DISEASES.	BENGAL ARMY.		
	1881-90.	1870-79.	1867-76.
Cholera -	1.9	3.3	3.8
Enteric Fever* -	.2	.4	.3
Ague† -	593.5	805.5	744.6
Phthisis pulmonalis -	3.2	2.5	2.1
Respiratory Diseases‡ -	57.9	67.3	51.6
Dysentery -	60.8	89.7	75.5
Diarrhoea -	26.3	51.3	47.2
Scurvy -	2.7	3.1	2.7
Venereal diseases -	34.3	33.0	34.7
Guinea-worm§ -	1.8	1.7	—
All causes -	1,200.2	1,521.1	1,424.8
Constantly sick-rate -	38.1	47.1	43.4

* From 1872.

† Including febricula up to 1885 inclusive.

‡ Including tonsillitis up to 1885 inclusive.

§ From 1878.

Died per 1,000 of Strength.

DISEASES.	BENGAL ARMY.		
	1881-90.	1870-79.	1867-76.
Cholera -	1.15	2.05	2.24
Enteric fever* -	.10	.18	.14
Ague -	.74	2.10	1.53
Phthisis pulmonalis -	.90	.80	.72
Respiratory diseases -	4.63	5.29	3.02
Dysentery -	.94	1.65	1.08
Diarrhoea -	.73	1.09	.76
Scurvy -	.08	.12	.13
Anæmia and debility -	.43	.63	.47
All causes -	14.27	19.37	14.25

* From 1872.

The decennium 1881-90 compares favourably with its predecessors in respect of both sickness and mortality from cholera, ague, dysentery, and diarrhoea;

unfavourably in respect of sickness and mortality from phthisis pulmonalis; while in respect of sickness and mortality from respiratory diseases it occupies an intermediate position.

A table for the ten-year period 1882-91 for Native troops will be found after the annual tables. The system of numbering adopted is explained in pp. 44, 45. It has not been found possible to complete the Native Army series of 1882-91 tables this year. Next year the tables for groups and stations will also be given, as well as those for corps, but, of course, for 1883-92. At the foot of Decennial Table 7 are given, for convenience of reference, the ratios for India, year by year, of some of the principal diseases.

The sickness of the native army of Bengal was increased by influenza and malaria; but mortality was somewhat diminished unless those who died while absent from their regiments be included. Cholera mortality was less, though still high. Bengal Army.

Sickness and Mortality of the ten-year periods, 1867-76, 1881-90, and 1882-91, and of the years 1891 and 1892.

YEAR.	Average Annual Strength present.	RATIO PER 1,000.				
		Admissions into Hospital.	Constantly Sick.	DEATHS FROM		Mortality, including absent Deaths.
				Cholera.	All Causes.	
1867-76 * - - - -	39,508	1,360	42	2·12	13·84	17·25
1881-90 - - - - -	55,244	1,200	38	1·15	14·27	18·22
1882-91 - - - - -	56,963	1,150	37	1·49	13·91	17·71
1891 † - - - - -	66,230	1,021	35	3·73	17·32	18·03
1892 ‡ - - - - -	65,594	1,234	40	2·58	16·53	19·70

* Excluding Punjab Frontier Force.

† Excluding certain men on escort duty.

‡ Excluding certain men at Panjgur and on the march.

The chief causes of admission were ague, diseases of the integuments, injuries, and dysentery. Among the diseases with raised admission rates were influenza, enteric fever, "other fevers," heatstroke, ague, respiratory diseases, and dysentery. Among those with lessened rates were cholera, remittent and simple continued fevers, and guineaworm. Ague caused 51 per cent. of the admissions.

The chief causes of death were pneumonia, cholera, remittent fever, and respiratory diseases other than pneumonia. Among the diseases which caused increased mortality were heatstroke, enteric fever, pneumonia, other respiratory diseases, and dysentery. Among those from which mortality was lessened were small-pox, injuries, cholera, suicide, hepatitis, and spleen diseases. Pneumonia caused 25 per cent. of the total deaths, cholera 16 per cent., and remittent fever 11 per cent.

The chief causes of invaliding were debility and rheumatism.

In all respects the statistics of the corps in Central India and Rajputana were worse than in the previous year. Corps of Central India and Rajputana.

Sickness and Mortality of the ten-year periods 1881-90 and 1882-91, and of the years 1891 and 1892.

YEAR.	Average Annual Strength present.	RATIO PER 1,000.				
		Admissions into Hospital.	Constantly Sick.	DEATHS FROM		Mortality including absent Deaths.
				Cholera.	All Causes.	
1881-90 - - - - -	5,161	709	21	·43	8·27	9·46
1882-91 - - - - -	5,175	690	20	·48	7·85	9·03
1891 - - - - -	5,175	629	20	·58	7·73	8·96
1892 - - - - -	5,128	777	21	2·54	9·56	10·50

The chief causes of admission were ague, injuries, and diseases of the integuments. Among the diseases with raised admission rates were cholera, hepatitis, influenza, and ague. Among those with lessened admission rates were guineaworm, "other fevers," pneumonia, and dysentery. Ague caused 48 per cent. of the total admissions.

The chief causes of death were cholera, pneumonia, and remittent fever. Among the diseases with increased mortality were cholera, ague, and dysentery. Among those with lessened mortality were heatstroke, injuries, suicide, and circulatory diseases. Cholera caused 26 per cent. of the total deaths, and pneumonia 24 per cent.

Madras
Army.

The health of the native army of Madras improved, though cholera increased. It will be observed that the ratios compare unfavourably with those of the decennia; but it must be remembered that Burma was not in occupation during the whole of either decennium.

Sickness and Mortality of the ten-year periods 1881-90, and 1882-91, and of the years 1891 and 1892.

YEAR.	Average Annual Strength present.	RATIO PER 1,000.				Mortality, including absent Deaths.
		Admissions into Hospital.	Constantly Sick.	DEATHS FROM		
				Cholera.	All Causes.	
1881-90 - -	25,960	835	33	1.98	12.99	27.87
1882-91 - -	25,715	836	34	2.05	13.81	18.94
1891 - - -	26,088	1,017	46	1.99	20.05	27.32
1892 - -	25,963	868	38	2.27	18.53	26.00

The chief causes of admission were ague, diseases of the integuments, injuries, and dysentery. Among the diseases with raised admission rates were influenza, small-pox, cholera, and pneumonia. Among those with lessened admission rates were spleen diseases, dysentery, and malarial fevers. Ague caused 39 per cent. of the total admissions.

The chief causes of death were cholera, pneumonia, debility, ague, dysentery, and remittent fever. Among the diseases which caused increased mortality were simple continued fever, pneumonia, hepatitis, injuries, and cholera. Among those from which mortality was lessened were ague, diarrhoea, and remittent fever. Cholera caused 12 per cent. of the total deaths, pneumonia nearly 12 per cent., debility 11 per cent., and ague 10 per cent.

The chief causes of invaliding were debility and malarial fevers.

The following table shows the statistics of all the troops serving in Burma and the Andamans. Of these troops the Madras Army furnished in 1892 about 84 per cent. :—

YEAR.	Average Annual Strength present.	RATIO PER 1,000 OF STRENGTH.			
		Admissions into Hospital.	Constantly Sick.	DEATHS FROM	
				Cholera.	All Causes.
1891 - - - -	11,401	1,676	76	1.75	36.31
1892 - - - -	11,333	1,349	57	2.29	29.12

The health of the native army of Bombay somewhat deteriorated, though cholera Bombay mortality was reduced. Army.

Sickness and Mortality of the ten-year periods 1881-90 and 1882-91, and of the years 1891 and 1892.

YEAR.	Average Annual Strength present.	RATIO PER 1,000.				Mortality, including absent Deaths.
		Admissions into Hospital.	Constantly Sick.	DEATHS FROM		
				Cholera.	All Causes.	
1881-90	23,140	1,151	38	1.12	14.58	16.74
1882-91	23,024	1,098	36	1.11	12.88	15.35
1891*	23,780	978	31	1.26	9.63	12.34
1892*	23,355	1,130	34	.81	10.10	12.48

* Excluding certain men on escort duty.

The chief causes of admission were ague, diseases of the integuments, injuries, and dysentery. Among the diseases with raised admission rates were small-pox, malarial fevers, and dysentery. Among those with lessened rates were influenza, cholera, and enteric fever. Ague caused 50 per cent. of the total admissions.

The chief cause of death was pneumonia. Among the diseases which caused increased mortality were tubercle of the lungs, injuries, and pneumonia. Among those with lessened mortality rates were debility, enteric fever, cholera, and remittent fever. Pneumonia caused 26 per cent. of the total deaths.

The chief causes of invaliding were debility and respiratory diseases.

The health of the Hyderabad Contingent was worse than in the preceding year, and the ratios compare unfavourably also with those of the decennia. Cholera mortality was increased. Hyderabad Contingent.

Sickness and Mortality of the ten-year periods 1881-90 and 1882-91, and of the years 1891 and 1892.

YEAR.	Average Annual Strength present.	RATIO PER 1,000.				
		Admissions into Hospital.	Constantly sick	DEATHS FROM		Mortality- including absent deaths.
				Cholera.	All causes.	
1881-90	6,673	590	20	.78	6.28	8.11
1882-91	6,672	575	20	.84	6.10	8.04
1891	7,063	529	19	1.13	6.09	7.83
1892	7,058	681	22	1.70	7.08	8.85

The chief causes of admission were ague, diseases of the integuments, injuries, and influenza. Among the diseases with raised admission rates were influenza, simple continued fever, small-pox, pneumonia, other respiratory diseases, and ague. Among those with lessened rates were remittent fever, tubercle of the lungs, dysentery, and rheumatism. Ague caused 36 per cent. of the total admissions.

The chief causes of death were cholera, pneumonia, and injuries. Among the diseases which caused increased mortality were circulatory diseases, cholera, pneumonia, and injuries. Among those with lessened rates were malarial fevers, and respiratory diseases other than pneumonia. Cholera caused 24 per cent. of the total deaths, pneumonia 22 per cent., and injuries 18 per cent.

Having considered individually the health statistics of the several portions of the native army of India in the foregoing paragraphs, it will now be convenient to contrast Comparison of Corps.

the main features of the same; and for ready reference the chief results are brought together in the following table:—

Corps.	Total Deaths per 1,000, including Absentees.	Average Strength present.	RATIO PER 1,000.			
			Admissions into Hospital.	Constantly Sick.	Deaths from Cholera.	Present Deaths from all Causes.
India	18·67	127,355	1,092	37	2·14	14·97
Bengal Army	19·70	65,594	1,234	40	2·58	16·53
Corps of Central India and Rajputana	10·50	5,128	777	21	2·54	9·56
Madras Army	26·00	25,963	868	38	2·27	18·53
Bombay Army	12·48	23,355	1,130	34	·81	10·10
Hyderabad Contingent	8·35	7,058	681	22	1·70	7·08

As usual, the health of the Hyderabad contingent and of the Corps of Central India and Rajputana was the best. Sickness was greatest in the Bengal Army, and mortality in the Madras Army.

Geographical
groups of
India.

For the reasons given in page 62 the decennial figures cannot this year be inserted in the following table. As it stands, the table shows that, in the comparison of 1892 and 1891, Groups VI., VII., and XI. come out worst:—

		RATIO PER 1,000 OF STRENGTH.											
		I.	II.	III.	IV.	V.	VI.	VII.	VIII.	IX.	X.	XI.	XII.
		Burma Coast and Bay Islands.	Burma Inland.	Assam.	Bengal and Orissa.	Gangetic Plain and Chutia Nagpur.	Upper Sub-Himalayan.	Indus Valley and North-Western Rajputana.	South-Eastern Rajputana, Central India, and Gujarat.	Deccan.	Western Coast.	Southern India.	Hill Stations.
													India.
1891	Constantly sick rate	57·3	88·4	77·4	54·4	31·5	30·1	35·8	24·2	26·8	22·8	26·0	47·5
	Death-rates from—												
	Cholera	—	2·42	·93	·96	·85	·57	1·31	·71	1·58	—	1·42	1·01
1892	Respiratory diseases	3·79	2·54	3·71	·96	3·11	3·41	7·78	2·64	2·17	·54	1·94	7·33
	Constantly sick rate	75·4	57·4	72·4	57·2	28·8	36·6	45·2	29·5	28·3	23·7	26·8	45·0
	Death-rates from—												
	Cholera	—	2·52	·80	—	2·10	2·48	3·24	1·43	·89	—	3·75	3·04
	Respiratory diseases	2·81	3·08	3·18	·68	1·95	6·67	9·22	2·36	2·04	1·38	2·54	5·59

The highest constantly sick ratio was that of Burma Coast, and the lowest that of Western Coast. The highest admission ratio was that of Assam, and the lowest that of Southern India. Burma Coast had the highest admission ratios from spleen diseases, rheumatism, eye diseases, and diseases of the integuments, and no influenza, phthisis, or guinea-worm; Burma Inland the highest from diarrhoea; Assam the highest from influenza, small-pox, enteric fever, dysentery, venereal diseases, and entozoa other than guinea-worm; Bengal-Orissa the highest from tubercle of the lungs, respiratory diseases other than pneumonia, and hepatitis; Indus Valley the highest from ague and pneumonia, and the lowest from venereal diseases; Central India the highest from guinea-worm; Western Coast the highest from simple continued fever and urinary diseases, and the lowest from pneumonia, tonsillitis, and spleen diseases; Southern India the highest from cholera, and the lowest from malarial fevers, respiratory diseases other than pneumonia, bowel complaints, and scurvy; the Hills the highest from remittent fever, "other fevers," tonsillitis, and scurvy.

The highest death ratio was that of Burma Inland, and the lowest that of Western Coast. Burma Inland had the highest death-rates from ague, dysentery, diarrhoea, spleen diseases, and debility; Assam the highest from small-pox, enteric fever, injuries, and suicide; Bengal-Orissa the lowest from pneumonia; Upper Sub-Himalayan the highest from heatstroke; Indus Valley the highest from remittent fever and pneumonia; Southern India the highest from cholera, and the lowest from respiratory diseases other than pneumonia; the Hills the highest from tubercle of the lungs, abscess of the liver, and respiratory diseases other than pneumonia.

Influenza greatly increased, there having been 1,795 cases, or 14.1 per 1,000 of strength, and 19 deaths, or 0.15 per 1,000 of strength, against 899, or 7.0, and 12, or 0.09 in the preceding year. The number of stations affected was 58 against 17, and of them 12 had also been affected in 1891. In 1892 ten groups were affected against eight; III., V., VI., VII., VIII., IX. and XII. were affected in both years; II., X., and XI., only in 1892, and I. only in 1891. It has already been mentioned that in proportion to strength Assam was most severely affected. The groups in which most cases occurred were the Deccan, the Hills, and the Gangetic Plain, and there were no cases only in Burma Coast and Bengal-Orissa. The revival of the epidemic really began in December of 1891. The maximum was reached in January, with a second rise in March, and again a slight rise at the end of the year. The greatest number of cases occurred at Hingoli, Dharmasala, Lucknow, and Jubbulpore, the two latter having had compact outbreaks. Mild cases were doubtless not always admitted, and diagnosis was probably sometimes uncertain. The following table shows that the Native were more severely affected than the European troops, much less severely than the prisoners. It also shows how both sickness and mortality from pneumonia rose in all three bodies:—

	PER 1,000 OF AVERAGE STRENGTH.											
	Influenza.		INCREASE OR DECREASE AS COMPARED WITH 1891.									
			Pneumonia.		Other Respiratory Diseases.		Simple continued Fever.		Ague.		All causes.	
	Admission.	Death.	Admission.	Death.	Admission.	Death.	Admission.	Death.	Admission.	Death.	Admission.	Death.
European Troops	12.7	.01	+ .9	+ .08	+ .4	- 0.3	+ 12.1	+ .03	+ 85.6	+ .10	+ 138.2	+ 1.18
Native Troops -	14.1	.15	+ 2.0	+ .73	+ .7	- .02	+ .2	- .04	+ 98.1	- .34	+ 120.0	- .47
Prisoners - - -	56.7	1.26	+ 1.4	+ .69	- .5	- .42	- 11.7	- .09	+ 106.5	+ .28	+ 143.3	+ 4.94

Cases of cholera occurred from March onwards, the maximum being in May. The admission rate was 3.3 per 1,000 of strength, the death-rate 2.14 per 1,000 of strength, and the fatality 62.03 per cent. of cases treated, against, respectively, 4.5, 2.64, and 56.77. In Southern India the cases bore the highest proportion to strength. The greatest number of cases occurred in the Hills, the Upper Sub-Himalayan, the Indus Valley, and Southern India. The Gurkhas at Almora had 60 cases, 58 in May and two in June. Cholera.

To fevers returned as malarial were due 49 per cent. of the sickness and 16 per cent. of the mortality of the Native Army. The admission per 1,000 of strength from these fevers rose in 1892, while the death-rate fell. Fevers.

The ratio of admission from enteric fever in the Native Army in 1892 was 0.4 per 1,000 of strength, and the death-rate 0.13. The corresponding decennial ratios of the period 1882-91 were 0.3 and 0.09. The following table shows that the ratios for European troops are very unlike those for Native troops and prisoners:—

Admission and Death Rates per 1,000 from Enteric Fever in the European Troops, Native Troops, and Jails of India compared.

	1882 TO 1891.		1892.	
	Admissions.	Deaths.	Admissions.	Deaths.
European troops -	14.7	4.13	22.1	5.52
Native troops -	3	.09	.4	.13
Jail population -	2	.10	.3	.15

Post-mortems are rarely obtained in the case of Native soldiers, but among prisoners nearly every fatal case of disease is subjected to *post-mortem* examination. Under these circumstances the fact that the ratios of prisoners and sepoys for a ten-year period (see also the tables in paragraphs 66 and 96) are practically identical, appears to show that the Native troops really suffer less than the European. Again, the following table shows that the fever mortality in the European and Native armies is not the same in amount, which indicates that the difference is not a mere matter of diagnosis.

Fever Mortality of Native Troops compared with that of European Troops in 1892.

CAUSES OF DEATH.	DIED PER 1,000 OF AVERAGE STRENGTH.		RELATIVE LIABILITY IN PERCENTAGES.			PERCENTAGE IN DEATHS FROM ALL CAUSES.	
	European Troops.	Native Troops.	European Troops.	Native Troops.	Total=100.	European Troops.	Native Troops.
Ague - - - -	·28	·98	22·2	77·8	100	1·6	6·6
Remittent fever - - -	1·10	·142	43·7	56·3	100	6·4	9·5
Simple continued fever - - -	·04	·05	44·4	55·6	100	·3	·3
Enteric fever - - -	5·52	·13	97·7	2·3	100	32·3	·8
TOTAL - - -	6·94	2·58	72·9	27·1	100	40·6	17·2

The total fever mortality among the native troops in 1892 was to the total fever mortality among European troops as 1 : 2·7. For the period 1886–91 the corresponding ratio was 1 : 1·9, and for 1891 it was 1 : 2·0. Again, among European troops 41 per cent. of all deaths in 1892 were from fevers, only 17 per cent. among Native troops. It appears, then, that native soldiers and prisoners are less liable to contract enteric fever than Europeans are. At a meeting of the Calcutta Medical Society, reported in the “Indian Medical Gazette” of May, 1893, Dr. Crombie showed from an examination of 20 years’ records of the Calcutta Hospitals, institutions where *post-mortem* examinations of fever cases are constantly being carried out, the rarity of enteric fever among native patients; and mentioned that he himself was not aware of ever having seen a case of enteric fever in a native of Bengal, though he had seen cases among Gurkhas and Burmans.

In the whole Native Army of India 54 cases with 16 deaths were returned as enteric fever, as against 35 with 17 in 1891. Of the deaths, 14 were in the Bengal Army, and two in the Bombay Army.

Dysentery.

From dysentery the admission and death rates were higher than in the preceding year, the former by 5·6, and the latter by 0·09 per 1,000 of strength. The highest admission rate was that of Assam, and the lowest that of Southern India; the highest death-rate was that of Burma Inland, and there were no deaths in Western Coast. On comparing the tables for European troops with those for Native troops, it will be seen that the death-rate of Natives from dysentery was to that of Europeans as 1·5 : 1, and that dysentery caused 6·4 per cent. of all the deaths of Native soldiers, but only 3·7 per cent. of the deaths of European soldiers. In 1891 these percentages were respectively 5·6 and 2·8.

Respiratory diseases.

The following table shows the ratios of admission from respiratory diseases in the principal divisions of the Native Army :—

PERIOD.	RATIO OF ADMISSION PER 1,000 OF STRENGTH.					
	India.	Bengal.	Corps of Central India and Rajputana.	Madras.	Bombay.	Hyderabad Contingent.
1881–85 - - - -	56	56	38	27	91	25
1886–91 - - - -	47	51	34	27	65	23
1891 - - - -	50	61	32	36	50	20
1892 - - - -	53	66	37	37	44	35

Except in the case of Bombay, the ratios were higher than in the previous year. This was probably due to the revival of the influenza epidemic. Increase was greatest in the case of the Hyderabad Contingent.

As respiratory disease is the chief cause of death in the Native Army, the following is given to compare the present with the past in respect thereof:—

PERIOD.	RATIO PER 1,000 OF STRENGTH.					
	DEATHS FROM RESPIRATORY DISEASES.					
	India.	Bengal.	Corps of Central India and Rajputana.	Madras.	Bombay.	Hyderabad Contingent.
1881-85	4.24	4.15	3.37	1.53	6.73	1.40
1886-91	3.41	4.25	2.72	1.60	3.80	1.52
1891	3.56	4.63	3.29	2.07	2.74	1.98
1892	4.27	5.51	2.93	2.74	3.51	1.90

All the corps-ratios, except that of Central India and Rajputana, were higher than in 1891, and all except Bombay were higher than in 1886-91.

The highest mortality from respiratory diseases other than pneumonia was, as in the preceding year, in the Hills.

The following table gives the admission and death rates per 1,000 from pneumonia in 1892, and shows a general deterioration, except in the case of Central India and Rajputana:—

PERIOD.	INDIA.		BENGAL.		CORPS OF CENTRAL INDIA AND RAJPUTANA.		MADRAS.		BOMBAY.		HYDERABAD CONTINGENT.	
	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.
1891	11.6	2.53	14.9	3.35	12.4	2.71	7.2	1.53	9.5	1.77	3.7	.99
1892	13.6	3.26	17.4	4.18	11.9	2.34	9.3	2.16	9.5	2.65	9.2	1.56

Then follows a table from which may be seen at a glance the incidence of mortality from pneumonia in the various geographical groups:—

	GROUPS.											
	Burma Coast and Bay Islands.	Burma Inland.	Assam.	Bengal and Orissa.	Gangetic Plain and Chutia Nagpur.	Upper Sub-Himalayas.	Indus Valley and N. W. Rajputana.	S. E. Rajputana, Central India and Gujarat.	Deccan.	Western Coast.	Southern India.	Hill Stations.
Death-rates per 1,000 of average annual strength.	2.25	1.96	1.99	.84	1.35	5.02	7.57	1.79	1.57	.55	2.42	3.91
Percentages in total deaths.	9.8	6.6	9.1	3.7	16.7	30.4	34.7	22.7	20.8	9.5	16.8	19.3

It shows high mortality from pneumonia in the Indus Valley and in the Upper Sub-Himalayan. It also shows the high percentage of pneumonia to the total death-causes

in those regions. Again, from the following, it may be gathered that in 1892 the mortality of Native soldiers from pneumonia was more than five times as great as that of European soldiers.

CAUSE OF DEATH.	DIED PER 1,000 OF AVERAGE STRENGTH.		RELATIVE LIABILITY IN PERCENTAGES.			PERCENTAGES IN DEATHS FROM ALL CAUSES.	
	European Troops.	Native Troops.	European Troops.	Native Troops.	Total = 100.	European Troops.	Native Troops.
Pneumonia - -	·62	3·26	16·0	84·0	100	3·6	21·8

Venereal diseases.

In the case of European troops the number of cases of "other venereal diseases" was checked by correspondence with every station in India, but it was not possible to carry out this check in the case of Native troops. It is probable, therefore, that negligence in return may have made the number of "other venereal diseases" shown in this report somewhat too high. The following statements are given to correspond with those already given for European troops. The first shows that the venereal ratio for India of 1892 was somewhat higher than that of 1891 and that the ratios of the armies of Bengal, Madras, and Bombay were raised, while the ratios of the two smaller corps were lowered.

Venereal Disease in the Native Army of India.

CORPS.	ADMISSION PER 1,000 OF STRENGTH.			
	1866.	1884.	1890.	1891.
Bengal Army - - -	47·6	31·3	35·5*	37·5*
Corps of Central India and Rajputana - - -	59·3	18·1	21·1	17·4
Madras Army - - -	22·6	22·6	42·7	45·5
Bombay Army - - -	No record	32·1	47·0	49·6
Hyderabad Contingent - - -	No record	16·4	23·5	21·1
India - - - -	Incomplete	27·9†	37·9*†	39·6*†

* Including Native drivers of European batteries.

† Including mixed troops of Bengal, Madras, and Bombay.

The second shows, taking the figures to the right of the brackets, that the ratios of the different forms of venereal disease were higher in 1892 than in 1891.

VENEREAL DISEASES.	1884.*		1891.		1892.	
	STRENGTH 127,477.		STRENGTH 128,600.		STRENGTH 127,355.	
	Admissions into Hospital.	Ratio per 1,000.	Admissions into Hospital.	Ratio per 1,000.	Admissions into Hospital.	Ratio per 1,000.
Primary syphilis - - -	1,266	9·9	1,206	9·4	1,166	9·2
Ulcer of penis - - -	—	—	548	4·3	635	5·0
Secondary syphilis - - -	609	4·8	887	6·9	1,001	7·9
Gonorrhœa - - -	959	7·5	1,377	10·7	1,440	11·3
Other venereal diseases - - -	333	2·6	853	6·6	800	6·3
Total - - -	3,167	24·8	4,871	37·9	5,042	39·6

* From Annual Returns and excluding Native drivers of European batteries.

The third shows that the ratios of both European and Native troops for 1892 were higher than the corresponding ratios of 1891; that Madras was worst in the case of European troops, and Bombay best; that Bombay was worst in the case of Native troops, and Bengal best, and that in all cases, as usual, the ratios of the European troops were higher than those of the Native troops. Among the European troops of India, there were 410 admissions to every 1,000 men, among the Native troops only 40.

A Comparative Summary of Venereal Disease in the European and Native Armies.

	1884.				1891.				1892.			
	EUROPEAN TROOPS.		NATIVE TROOPS.		EUROPEAN TROOPS.		NATIVE TROOPS.		EUROPEAN TROOPS.		NATIVE TROOPS.	
	Admissions.	Ratio per 1,000.	Admissions.	Ratio per 1,000.	Admissions.	Ratio per 1,000.	Admissions.	Ratio per 1,000.	Admissions.	Ratio per 1,000.	Admissions.	Ratio per 1,000.
Army of Bengal -	9,731	290·6	1,608	31·3	16,203	395·3	2,354	35·5	17,403	412·4	2,458	37·5
Army of Madras	3,308	306·7	635	22·6	5,357	402·1	1,115	42·7	5,489	415·0	1,182	45·5
Army of Bombay	8, 27	291·6	750	32·1	5,302	417·1	1,118	47·0	5,035	396·1	1,159	49·6
Army of India -	16,166	293·9	3,200	27·9	26,862	400·7	4,871	37·9	27,927	409·9	5,042	39·6

The fourth, again, shows that the increase-decrease of secondary syphilis in both Native and European troops in 1892 was slight, and that the secondary syphilis of Native troops runs at an altogether lower level than the secondary syphilis of European troops.

Comparison of the Secondary Syphilis Ratios of the European and Native Armies.

	1884.	1891.	1892.
European troops -	24·4	58·5	57·8
Native troops -	4·8	6·9	7·9

It is, of course, but natural that the ratios of the Native troops should be much less than those of the European troops, considering the very different environment of the two bodies of men.

Jails.

There was an increase, as shown in the subjoined table, of the average jail population in 1892. Influenza, malaria, and cholera being prevalent, there was increased sickness and mortality. Mortality from dysentery was much increased. Sickness and mortality in 1892.

Statement showing the Sickness and Mortality among the Prisoners of India during 1877-81, 1881-90, 1882-91, 1891, and 1892.

YEAR.	Average Annual Strength.	RATIO PER 1,000.				
		Admissions into Hospital.	Constantly Sick.	DEATHS FROM		
				Cholera.	Dysentery and Diarrhœa.	All Causes.
1877-81 - . . .	112,670	1,189	45	4·48	24·97	63·01
1881-90 - . . .	89,978	1,113	39	2·91	11·72	34·96
1882-91 - . . .	89,642	1,093	38	2·91	10·77	33·61
1891* -	101,019	1,043	37	3·09	8·42	31·89
1892† -	103,159	1,186	41	4·73	9·77	36·83

* Including the subsidiary jails 104,435

† Including the subsidiary jails 106,739

The chief causes of admission were ague, dysentery, abscess, diarrhœa, and influenza. Among the diseases with raised admission rates were influenza, cholera, malarial fevers, debility, pneumonia, bowel complaints, and abscess. Among those from which admission-rates were lower were simple continued fever, respiratory diseases other than pneumonia, eye diseases, and entozoa. Ague caused 42 per cent. of the total sickness, and bowel complaints 15 per cent.

The chief causes of death were dysentery, pneumonia, and cholera. Among the diseases which caused increased mortality were dysentery, debility, cholera, enteric

fever, nervous diseases, and pneumonia. Among those from which mortality was lessened were "other fevers," diarrhoea, and injuries. Dysentery caused 21 per cent. of the total deaths, pneumonia 15 per cent., and cholera 13 per cent.

The following statement shows for each administration the proportion of prisoners in 10,000 of the population :—

Ratio of Prisoners per 10,000 of Population in each of nine Administrations for 1891 and 1892. (Andamans excluded.)

ADMINISTRATIONS.	Period.	General Population, according to Census of 1891.	PRISONERS.		
			Average Number.*	Proportion to 10,000 of Population.	Deaths per 1,000 of Average Strength.*
Burma - - - - -	1891	7,605,560	11,444	15·0	30·23
	1892		11,844	15·6	33·10
Assam - - - - -	1891	5,476,833	1,322	2·4	63·54
	1892		1,290	2·4	58·91
Bengal - - - - -	1891	71,346,987	15,917	2·2	30·97
	1892		17,178	2·4	37·32
N.-W. Provinces and Oudh	1891	46,905,085	28,268	6·0	27·63
	1892		27,505	5·9	29·19
Punjab - - - - -	1891	20,866,847	12,439	6·0	28·38
	1892		12,853	6·2	30·19
Bombay - - - - -	1891	18,901,123	7,543	4·0	32·48
	1892		7,552	4·0	36·94
Berar - - - - -	1891	2,879,491	1,065	3·7	11·27
	1892		1,224	4·2	17·16
Central Provinces	1891	10,784,294	4,675	4·3	30·37
	1892		4,716	4·4	44·95
Madras - - - - -	1891	35,630,440	9,779	2·7	35·08
	1892		11,095	3·1	45·43

* Including subsidiary jails.

An explanation has been given in page 43 with regard to decennial statistics. In the case of jails the statistics of India as a whole are not available before 1877. The comparison of decennia must in this case, therefore, be confined to the "Bengal Presidency," which comprises the administrations of Assam, Bengal, the North-Western Provinces, and Oudh, the Punjab, and the Central Provinces. The following tables compare the decennium 1881-90 with the decennium 1870-79, and also with the decennium 1867-76, which, of course, partially overlaps 1870-79 :—

JAILS OF THE BENGAL PRESIDENCY.

Admitted per 1,000 of Strength.

ADMISSIONS FROM	1881-90.	1870-79.	1867-76.
Ague* - - - - -	458	451	417
Dysentery - - - - -	112	110	103
Diarrhoea - - - - -	100	95	90
Respiratory diseases†	46	41	37
Anæmia and debility	28	19	14
Spleen diseases	9	8	8
Phthisis pulmonalis	5	4	4
Cholera - - - - -	5	8	8
Scurvy - - - - -	3	4	3
Hepatitis‡	1	1	1
Total from all causes	1,088	1,046	1,000
Constantly sick per 1,000 of Strength	36	34	31

* Including febricula up to 1885 inclusive.

† Including tonsillitis and sore throat from 1867 up to 1885 inclusive.

‡ Including hypertrophy and simple enlargement of the liver from 1867 up to 1885 inclusive.

Died per 1,000 of Strength.

DEATHS FROM	1881-90.	1870-79.	1867-76.
Dysentery - - - - -	8·37	13·03	15·58*
Respiratory diseases - - - - -	6·83	6·25	4·81
Diarrhoea - - - - -	4·80	5·46	†
Cholera - - - - -	2·99	3·63	3·42
Anæmia and debility - - - - -	2·24	2·89	2·20
Phthisis pulmonalis - - - - -	2·16	2·43	2·19
Ague - - - - -	·93	1·82	†
Spleen diseases - - - - -	·26	·36	·39
Hepatitis - - - - -	·19	·15	·17
Scurvy - - - - -	·11	·12	·09
Total from all causes - - - - -	36·41	45·77	38·63

* Including diarrhoea.

† Included in dysentery.

‡ Not separated from other fevers.

In reading these tables attention must be paid to the footnotes. There has been an improvement in the general death-rate, and in the death-rate from all the diseases shown in the table, except respiratory diseases and hepatitis; and, as far as is known, this improvement may be put down to increased attention to sanitation. At the same time the constantly sick-rate and the general admission-rate have risen, as also the admission-rates from all the diseases given, except cholera and scurvy. This curious result might be due to increase of non-fatal diseases, but may, not improbably, be owing to greater care taken to admit sick men into hospital, instead of treating large numbers of them as out-patients. This latter explanation rather gains support from the fact of cholera forming an exception, as just noted; as prisoners suffering from cholera are not likely ever to have been treated as out-patients.

The tables for 1892-91 will be found after the annual tables belonging to this section. The system of numbering adopted, and other matters concerning them, have been explained in page 44. At the foot of Table 15 the ratios for India of some of the chief diseases have been given year by year for convenience of reference. Extracts from these decennial tables will be found in most of the minor tables throughout this section.

The following table shows the proportion in which some of the principal diseases entered into the composition of a hundred deaths in each administration:—

CAUSES OF DEATH.	COMPOSITION OF 100 DEATHS.									
	Anda- mans.	Burma.	Assam.	Bengal.	North- Western Provinces and Oudh.	Punjab.	Bombay.	Berar.	Central Pro- vinces.	Madras.
Cholera - - - - -	—	27·3	16·2	10·9	5·1	7·5	2·6	—	21·7	33·2
Fevers - - - - -	14·4	6·1	4·4	10·7	6·6	7·7	10·7	—	4·7	1·9
Pneumonia - - - - -	11·4	10·7	11·8	14·4	14·7	38·1	24·6	4·8	10·4	3·4
Dysentery and diarrhoea - - - - -	39·8	18·9	33·8	30·4	21·1	18·6	23·9	23·8	28·8	27·1
Tubercle of the lungs - - - - -	—	7·9	—	5·1	6·6	5·9	·4	4·8	·5	3·2
Anæmia and debility - - - - -	10·5	3·6	4·4	3·8	8·5	1·5	10·3	—	7·5	3·2
All causes - - - - -	100·0	100·0	100·0	100·0	100·0	100·0	100·0	100·0	100·0	100·0

The Andamans had the highest mortality from remittent fever, respiratory diseases other than pneumonia, dysentery, and debility, and, as usual, no cholera; Burma the highest mortality from tubercle of the lungs; Assam the highest mortality from small-pox, diarrhoea, spleen diseases, and all causes, and no deaths from tubercle of the lungs or scurvy; Bengal the highest mortality from ague; the Punjab the highest mortality from heatstroke, pneumonia, and sloughing; Bombay the highest mortality from simple continued fever and scurvy; Berar the highest mortality from nervous diseases, circulatory diseases, and injuries, and no deaths from cholera, fevers, scurvy,

or debility; the Central Provinces the highest mortality from "other fevers" and urinary diseases; Madras the highest mortality from cholera and enteric fever, and the lowest from pneumonia.

In the Andamans the health of the prisoners was worse than in the preceding year, this being due to influenza and increased malaria following the great cyclone of the preceding November. The constantly sick rate rose from 59 per 1,000 of average strength to 60 and the death-rate from 41·47 to 50·78. The chief causes of admission were ague, dysentery, respiratory diseases other than pneumonia, and abscess, &c. The admission-rates from influenza, malarial fevers, respiratory diseases, bowel complaints, debility, and scurvy were raised; while those from tubercle of the lungs, spleen diseases, and diseases of the integuments were lowered. The settlement remained free from cholera. Ague caused 55 per cent. of the total sickness. The chief causes of death were dysentery, respiratory diseases, remittent fever, and debility. The mortality from pneumonia, remittent fever, dysentery, debility, and scurvy, was raised; while that from injuries, tubercle of the lungs, and diarrhoea was lowered. Dysentery caused 38 per cent. of the total deaths.

Sickness in the Burma jails increased, cholera having been prevalent. The constantly sick rate rose from 35 to 43 per 1,000 and the death-rate from 30·23 to 33·10. The chief causes of admission were ague, abscess, &c., eye diseases, dysentery, diarrhoea, and simple continued fever. The admission-rates from cholera, respiratory diseases, especially pneumonia, tubercle of the lungs, diseases of the integuments, and malarial fevers, were raised; while those from simple continued fevers, influenza, bowel complaints, and debility, were lowered. Ague caused 22 per cent. of the total sickness. The chief causes of death were cholera, dysentery, pneumonia, and tubercle of the lungs. The mortality from cholera, dysentery, pneumonia, tubercle of the lungs, and debility was raised; while that of remittent fever, respiratory diseases other than pneumonia, nervous diseases, circulatory diseases, diarrhoea, and scurvy was lowered. Cholera caused 27 per cent. of the total deaths, and dysentery 16 per cent.

The ratios of sickness and mortality show a considerable improvement in the health of the prisoners of Assam, even though cholera increased. The constantly sick rate fell from 70 to 52 per 1,000 and the death-rate from 66·91 to 62·79. The chief causes of admission were ague, diarrhoea, dysentery, abscess, &c., and respiratory diseases other than pneumonia. The admission-rates from influenza, cholera, circulatory diseases, respiratory diseases, spleen diseases, and eye diseases were raised; while those from scurvy, bowel complaints, and nervous diseases were lowered. Ague caused 42 per cent. of the total sickness. The chief causes of death were dysentery, cholera, pneumonia, other respiratory diseases, and diarrhoea. The mortality from remittent fever, respiratory diseases, and cholera was raised; while that from bowel complaints, scurvy, and debility was lowered. Dysentery caused 26 per cent. of the total deaths, and cholera 16 per cent.

With the exception of a slight improvement in the admission-rate, from 1,134 per 1,000 to 1,122, the health of the prisoners of Bengal exhibited a falling off, as compared with that of the previous year, the death-rate having increased from 31·39 to 37·09 per 1,000. The chief causes of admission were ague, dysentery, diarrhoea, influenza, and "other fevers." The admission ratios from "other fevers," influenza, pneumonia, and eye diseases were raised; while those from simple continued fever, malarial fevers, spleen diseases, and debility were lowered. Ague caused 26 per cent. of the total sickness, and dysentery 19 per cent. The chief causes of death were dysentery, pneumonia, and cholera. The mortality from dysentery, cholera, and pneumonia was raised; while that from all fevers, except ague, and from diarrhoea, was lowered. Dysentery caused 26 per cent. of the total deaths, pneumonia 14 per cent., and cholera 11 per cent.

Notwithstanding a reduction of mortality from cholera and bowel complaints, the health of the prison population of the North-Western Provinces and Oudh showed a deterioration, in great part due to influenza, as compared with the present year. The constantly sick-rate rose from 34 to 41 per 1,000 and the death-rate from 27·83 to 29·07. The chief causes of admission were ague, influenza, abscess, &c., and dysentery. The admission ratios from influenza, ague, enteric fever, hepatitis, and abscess were raised; while those from cholera, small-pox, respiratory diseases, bowel complaints, spleen diseases, and debility were lowered. Ague caused 31 per cent. of the total sickness. The chief causes of death were dysentery and pneumonia. The mortality

from ague, tubercle of the lungs, and debility was raised; while that from cholera, respiratory diseases, and bowel complaints was lowered. Dysentery and pneumonia caused each 15 per cent. of the total deaths.

The health of the Punjab prisoners deteriorated, there being an increase of cholera mortality. The constantly sick-rate of 47 per 1,000 showed an increase of 7 on the rate of 1891 and the death-rate rose from 28·31 to 30·56. The chief causes of admission were ague, abscess, &c., diarrhœa, and dysentery. The admission-rates from ague, cholera, and bowel complaints were raised; while those from remittent fever, simple continued fever, guinea-worm, and respiratory diseases other than pneumonia were lowered. Ague caused 68 per cent. of the total admissions. The chief causes of death were pneumonia, dysentery, and cholera. The mortality from cholera, ague, pneumonia, and bowel complaints was raised; while that from remittent fever, enteric fever, and "other fevers" was lowered. Pneumonia caused 38 per cent. of the total deaths.

In the jails of the Bombay Presidency as a whole all the ratios compare unfavourably with those for the preceding year, except the death-rate from bowel complaints. The constantly sick rate rose from 27 to 31 per 1,000 and the death rate from 33·46 to 37·43. The chief causes of admission were ague, diarrhœa, and dysentery. The admission-rates from simple continued fever, malarial fevers, and bowel complaints were raised; while those from respiratory diseases, influenza, spleen diseases, and diseases of the integuments were lowered. Ague caused 39 per cent. of the total sickness. The chief causes of death were pneumonia, diarrhœa, dysentery, and debility. The mortality from nervous diseases, cholera, bowel complaints, and debility was raised; while that from heat-stroke, respiratory diseases, tubercle of the lungs, and injuries was lowered. Pneumonia caused 25 per cent. of the total deaths, and bowel complaints 24 per cent.

The health of the prisoners of Berar showed a decided falling off, though there was no cholera. The constantly sick rate (16) increased by 2 per 1,000 and the mortality (17·17) by nearly 6 per 1,000. The chief cause of admission was ague. The admission ratios from influenza and ague were raised; while those from bowel complaints, guinea-worm, and remittent fever were lowered. Ague caused 60 per cent. of the total sickness. The chief causes of death were circulatory diseases, dysentery, and injuries. The mortality from dysentery, injuries, nervous diseases, and circulatory diseases was raised; while that from debility, pneumonia, ague, and diarrhœa was lowered. Circulatory diseases, dysentery, and injuries caused each 19 per cent. of the total deaths, and nervous diseases 14 per cent.

In the jails of the Central Provinces sickness increased with a sudden rise in cholera mortality, the constantly sick-rate being 31 per 1,000 against 28 in 1891, and the death-rate 44·95 against 30·37. The chief causes of admission were ague, abscess, &c., dysentery, and diarrhœa. The admission-rates from influenza, cholera, remittent fever, simple continued fever, bowel complaints, and debility were raised; while those from "other fevers," tubercle of the lungs, and pneumonia were lowered. Ague caused 38 per cent. of the total sickness. The chief causes of death were dysentery, cholera, pneumonia, and debility. The mortality from cholera, debility, and dysentery was raised; while that from malarial fevers, diarrhœa, and nervous diseases was lowered. Dysentery caused 24 per cent. of the total deaths and cholera 22 per cent.

The increase of sickness from 24 to 29 per 1,000, and mortality from 38·25 to 51·20, among the prisoners of Madras, is attributed to cholera and bowel complaints, following food-scarcity in the Presidency. The chief causes of admissions were ague, diarrhœa, dysentery, debility, and abscess, &c. The admission rates from influenza, cholera, malarial fevers, respiratory diseases, dysentery, debility, and guinea-worm were raised, while those from eye diseases and diarrhœa were lowered. Bowel complaints caused 26 per cent. of the total sickness, and ague 15 per cent. The chief causes of deaths were cholera, dysentery, and diarrhœa. The mortality from cholera, dysentery, nervous diseases, circulatory diseases, tubercle of the lungs, and urinary diseases was raised; while that from fevers, diarrhœa, and debility was lowered. Cholera caused 38 per cent. of the total deaths and dysentery 21 per cent.

The following statement compares the geographical groups with their own past and with each other:—

		RATIO PER 1,000 OF AVERAGE STRENGTH.											
		I.	II.	III.	IV.	V.	VI.	VII.	VIII.	IX.	X.	XI.	XII.
		Burma Coast and Bay Islands.	Burma Inland.	Assam.	Bengal and Orissa.	Gaugetic Plain and Chutia Nagpur.	Upper Sub-Himalayan.	Indus Valley and North Western Rajputana.	South Eastern Rajputana, Central India, and Gujarat.	Deccan.	Western Coast.	Southern India.	Hills.
1882-91	Constantly sick -	53.7	44.1	56.6	51.0	28.5	35.2	29.4	26.7	29.6	29.0	25.0	48.6
	Deaths—cholera -	3.00	5.27	5.59	5.06	3.19	1.46	.09	1.71	3.50	.72	3.89	1.66
	Deaths—dysentery	7.01	5.88	13.37	14.48	6.78	5.05	2.62	2.79	7.51	4.73	3.87	9.05
1891	Constantly sick -	51.7	29.5	68.3	41.9	33.0	36.4	36.0	34.7	27.1	25.1	22.6	47.4
	Deaths—cholera -	2.70	.44	11.21	2.74	4.46	2.30	—	.45	.12	—	11.53	—
	Deaths—dysentery	9.13	4.21	17.33	7.54	5.97	3.48	3.07	1.79	3.82	5.86	3.80	13.53
1892	Constantly sick -	56.3	31.0	51.7	43.9	38.0	43.1	39.4	48.7	33.0	29.2	26.9	34.3
	Deaths—cholera -	2.80	12.06	10.54	2.65	3.01	1.38	2.45	1.77	5.27	11.93	19.01	—
	Deaths—dysentery	14.03	3.66	17.24	9.88	6.15	3.52	3.60	3.99	7.91	9.28	9.69	4.12

For the decennium 1882-91 Assam had the highest constantly sick rate, Southern India the lowest; Assam the highest death-rate from cholera, the Indus Valley the lowest; Bengal, and next to it Assam, the highest death-rate from dysentery, and the Indus Valley the lowest. In 1892 Groups VII., VIII., IX., X., and XI. compared altogether unfavourably with the past, Group XII. favourably, and Group IV. favourably with the decennium.

Of the 12 annual ratios of constantly sick, five were above the ratio for India, and seven below, the highest being that of Burma Coast, and the lowest that of Southern India. The highest admission rate was that of Assam, and the lowest that of Burma Inland. Burma Coast had the highest admission rates from respiratory diseases other than pneumonia, hepatic abscess, scurvy, and rheumatism, and the lowest from influenza; Burma Inland the highest from urinary and eye diseases; Assam the highest from diarrhoea, spleen diseases, and entozoa other than guinea-worm; Bengal-Orissa the highest from small-pox, remittent fever, simple continued fever, "other fevers," tubercle of the lungs, dysentery and hepatitis; the Upper Sub-Himalayan the highest from enteric fever and ague; the Indus Valley the highest from heat-stroke, pneumonia, and diseases of the integuments; Central India the highest from influenza; the Western Coast the highest from circulatory diseases; Southern India the highest from cholera, debility, and guinea-worm; the Hills the highest from nervous diseases and tonsillitis, and the lowest from cholera.

The highest death-rate was that of Assam, and the lowest that of the Hills. Burma Coast had the highest mortality from remittent fever, and the lowest from diarrhoea; Assam the highest from circulatory diseases, respiratory diseases other than pneumonia, dysentery, diarrhoea and injuries; Bengal-Orissa the highest from small-pox, ague, "other fevers," and tubercle of the lungs; the Upper Sub-Himalayan the lowest from dysentery; the Indus Valley the highest from heat-stroke, pneumonia, and sloughing; the Deccan the highest from hepatic abscess; Western Coast the highest from enteric fever, hepatitis, and scurvy; Southern India the highest from cholera and urinary diseases, and the lowest from remittent fevers; the Hills the highest from spleen diseases, and the lowest from cholera, tubercle of the lungs, pneumonia, and other respiratory diseases.

General Population.

The highest mean provincial birth-rates were recorded in Berar, 39.9, the Central Provinces, 38.39, and the Punjab, 38.16; in the remaining provinces the rates ranged from 36.17 in the North-Western Provinces and Oudh to 22.12 in Coorg and 17.88 in Mysore. The excess of male over female births varied from 13.87 per cent. in the Punjab to 3.99 per cent. in Coorg. In four provinces the number of deaths exceeded the number of births, the ratio of excess per 1,000 of the death-rate being, in the Punjab, 11.32, in Coorg, 8.49, in Bengal, 3.77, and in Assam, 3.16. In all the other provinces the birth-rate was higher than the death-rate, the excess per thousand

varying between 11·1 in Berar and 2·06 in the North-Western Provinces and Oudh, and 1·33 in Mysore.

The highest death-rates were registered in the Punjab 49·48, in Assam, 34·21, in the Central Provinces, 34·14, and in the North-Western Provinces and Oudh, 34·11; in the other provinces the rates ranged from 32·50 in Bombay to 20 in Lower Burma and 16·55 in Mysore.

In all provinces, except the Central Provinces, where the rates per thousand were, urban 27·30 and rural 34·77, the urban death-rate was higher than the rural, the excess varying from ·72 in the North-Western Provinces and Oudh to 5·7 in Madras and 10·59 in Burma.

Fevers, as usual, caused the greatest mortality, indeed, in most provinces fevers caused more deaths than all other causes put together. The highest death-rate under this heading was 34·83 per 1,000 in the Punjab, and 24·90 in the North-Western Provinces and Oudh, the lowest 8·3 in Madras and 8·2 in Mysore. The cholera death-rates varied from 4·29 and 4·21 in Assam and the Central Provinces, respectively, to ·7 in Berar and ·33 in Coorg. By far the highest death-rate from small-pox was recorded in Coorg, where 5·27 per 1,000 died from this disease. In the other provinces the death-rates varied between 1·74 in Mysore and ·02 in Berar. The highest death-rates from dysentery and diarrhoea were recorded in Berar, 3·9, and in Assam, 3·12, the lowest in the North-Western Provinces and Oudh, ·90, and in Bengal, ·68.

The following statement shows the deaths from all causes, recorded month by month, in the different provinces :—

PROVINCE.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Total.	Ratios of Deaths per 1,000 of Population.	
														1892.	1891.
Bengal	189,124	191,517	254,822	207,117	217,907	156,776	148,849	185,183	148,705	163,111	204,330	179,804	2,247,275	31·92	26·94
Assam	11,806	11,796	15,279	13,770	15,828	15,220	14,859	13,994	14,707	15,290	14,677	14,559	171,784	34·21	29·91
North-Western Provinces and Oudh.	118,254	101,747	135,673	174,597	192,819	145,360	110,577	104,021	129,534	141,983	128,015	117,263	1,600,053	34·11	31·14
Punjab	63,738	51,182	52,918	56,966	82,973	72,726	56,220	52,846	110,409	192,971	136,423	87,531	1,017,023	49·48	29·13
Central Provinces	20,246	20,108	29,659	34,055	31,964	28,427	27,439	23,325	27,223	26,855	26,521	23,526	324,348	34·14	35·54
Berar	6,255	5,926	9,133	8,987	5,533	3,705	4,809	6,027	8,408	8,458	8,180	6,103	82,124	28·8	40·6
Lower Burma	7,053	5,922	6,368	6,006	6,264	7,034	9,136	9,334	8,447	7,983	7,964	8,702	90,233	20·00	15·93
Madras Presidency	86,870	61,728	63,765	56,483	56,550	53,643	74,403	73,093	59,089	53,479	54,259	57,131	750,755	22·3	26·2
Bombay Presidency	60,044	45,142	49,156	41,729	41,517	44,243	60,342	51,974	48,023	51,317	60,052	49,198	611,742	32·50	27·26
Mysore	6,238	6,314	6,026	7,977	8,094	6,987	6,821	6,370	6,220	5,972	6,273	5,957	80,149	16·55	14·03
Coorg	469	437	446	362	394	522	514	544	476	428	354	353	5,299	30·62	21·79
TOTAL	579,096	501,819	624,145	608,049	659,843	534,843	514,051	532,916	560,931	667,832	647,078	550,162	6,980,785	—	—

In Bengal, until the end of 1891, the registration of births was confined to selected towns, and was effected by municipal agency. Since the beginning of 1892 registration has been extended to all town and rural areas, and the work has been entrusted to the police. It is carried out as follows. Each *chowkidar* or village watchman is provided with a pocket-book, in which he is to record, or to have recorded by the *punchayet* of the village, if he is illiterate, all births and deaths which take place within his jurisdiction; these are reported on certain days at the police-stations and out-posts, which are the registering centres. The statistics thus obtained are checked from time to time by Inspecting Officers, including Magistrates, Sub-Divisional and Police Officers, the Sanitary Commissioner and his deputies, and the superior officials of the Vaccination Staff. If omissions are detected, the defaulting *chowkidar* is reprimanded or punished. So far the plan has worked very successfully, and the Sanitary Commissioner hopes that the backward position of Bengal as regards the registration of vital statistics will be speedily improved.

The population of Bengal, excluding Calcutta, the Chittagong Hill Tracts, and the Tributary Estates of Angul in Orissa, according to the Census Report of 1891, is 70,388,083, and among this population 1,981,960 births were registered, equivalent to a birth-rate of 28·15 per 1,000. The Sanitary Commissioner believes that these figures represent very imperfectly the real birth-rate, which is something over 40 per 1,000. The average birth-rate for rural circles was 28·27. In the towns the birth-rate was 25·31, the ratios varying from 47·71 in Siwan to 4·65 in Jhalukati. Of the

145 towns, in three the birth-rate was over 40 per 1,000, in 19 between 35 and 40, in 19 between 30 and 35, between 20 and 30 in 63, under 20 in 41, of which five returned a rate under 10 per 1,000. In certain of the towns the low rates may perhaps be, in part, due to an excess of males over females in the population, but it must be concluded that registration is defective in most of the towns showing a low rate. The proportion per cent. of male to female births in the province was 108, varying in the different divisions from 111 in the Presidency Division to 106 in Chota Nagpur.

In seven of the nine divisions there was recorded an excess of deaths over births, the registered excess in the province being 3·77 per 1,000. In the Chittagong Division the excess of births over deaths was 8·9, and in Chota Nagpur 30 per 1,000. During the year 2,247,275 deaths were reported to have occurred, the death-rate being 31·92 per 1,000, against 26·94 in 1891. The average death-rate in districts, excluding towns, was 31·85, and varied from 43·88 in Backergunge to 19·12 in Singhbhum. In the towns the death-rate was 33·57, the ratios varying from 59·31 in Lalgunj in the district of Mozuffarpur, to 14·52 in Tangail in Mymensingh. The provincial death-rate among infants under one year of age was 168·29 per 1,000 of living, against 132·95 in 1891; and in children between one year and five years of age, 43·71 against 37·11 in the previous year. In Calcutta the death-rates among children under one year of age was 380·9, and among those between one year and four years, 47·9.

The population of the areas in Assam under registration was, according to the census of 1891, 5,021,084, and among this population in 1892 there were recorded 155,909 births, 12,361 in excess of the number registered in the previous year. The birth-rate was 31·05 against 28·59 in 1891. This rate is slightly lower than the rates recorded in 1888 and 1889, but as it is calculated on the greater population obtained by the census of 1891, it is, as the Sanitary Commissioner notes, really the highest on record. In the districts the ratios per 1,000 varied from 37·06 in Goalpara to 22·09 in Nowgong. The average birth-rate in the Surma Valley was 33·79, in the Assam Valley it was 28·36, and in the selected areas of the Khasi and Jaintia Hills 24·14. The mean birth-rate in town registration circles was 19·67, in rural circles it was 31·30. In the *sadar* towns the ratio of births per 1,000 of the population was 17·83, the highest ratio, 34·12, being recorded in Dibrugarh, and the lowest, 6·21, in Dhubri. The provincial average number of males born for every 100 females born was 107, the figures varying from 112 in Kamrup and in Darrang to 104 in Cachar.

The number of deaths rose from 150,156 in 1891 to 171,784 in the year under review, against 127,315, the average of the five years 1886 to 1890. The death-rate in 1892 was 34·21 per 1,000 against 29·91 in the previous year. In the province generally the death-rate exceeded the registered birth-rate by 3·16 per 1,000 of the population. In the Darrang district the excess of deaths over births registered was 14·46 per 1,000, in Kamrup the excess was 10·42, and in Nowgong 7·74; in two districts only did the recorded birth-rate exceed the death-rate, namely, Goalpara and Sylhet, where the ratios of excess were 2·04 and 26 per 1,000 respectively. Of the districts the highest death-rate was recorded in Darrang 41·41, and the lowest, in Sibsagar, 26·68. In the Surma Valley the death-rate was 34·33, in the Assam Valley it was 34·22, and in selected areas of the Khasi and Jaintia Hills, 28·11. In town circles the average death-rate was 38·80, and in rural circles 34·11. In the *sadar* towns the average death-rate was 40·96, including deaths in the dispensaries, but if these deaths are excluded, the rate was 26·45. Including deaths in the dispensaries, the highest death-rate registered was 80·78 in Tezpur, and the lowest 12·65 in Shillong. Between the ages of 10 and 30 the death-rate of females was higher than that of males; between the ages of 30 and 40 the death-rates of the sexes were equal, while at all other age-periods the male rates were the higher. Excluding the Khasi and Jaintia Hills, the death-ratios per 1,000 living among infants under one year of age were 179·85 and 161·82 for males and females respectively, the ratios for children over one year and under five years being 39·29 for males and 37·89 for females.

In the North-Western Provinces and Oudh the number of births registered was 1,696,427, an increase of 136,539 over the figure of 1891. The birth-rate was 36·17 per 1,000, compared with 38·18, the corrected decennial average. In 11 districts birth-rates of 40 per 1,000 and over were recorded. The highest district-rate was returned from Moradabad, 46·35, and the lowest from Ghazipur, 26·45, and Dehra Dun, 20·45. The average birth-rate in municipal towns was 34·94, and, among the larger, ranged from 45·70 in Koil (Aligarh) to 25·17 in Bareilly. Among the smaller municipalities the highest rate was 51·40 per 1,000, recorded in Khairabad, and high rates over 50 per 1,000 were returned from Amroha, Tilhar, Ujhani, and Sahaswan.

The lowest rates, 20·97 and 13·89, were registered in Bela and Dehra respectively. In the province as a whole the percentage of male to female births was 110·3.

The total number of deaths recorded was 1,600,053, less than the total number of births by 96,374, and the death-rate was 34·11, against 31·14 in 1891, and 31·66, the corrected average of the decennium 1881 to 1890. In the districts the highest death-rate, 52·35, was recorded in Naini Tal, including the Terai and Bhabar, and very high death-rates were registered in Dehra Dun, 43·35, Garhwal, 45·34, and Almora, 48·47, due to the great prevalence of cholera in the Hill Tracts. The lowest rate, 23·13, was returned from Ghazipur. In the municipal towns the average death-rate was 34·82 per 1,000, compared with 36·51 in 1891, which was on the whole the healthier year. Among the larger municipalities, the highest rate of mortality was recorded, as in the previous year, in Fyzabad, but it was only 43·09 against 52·62 in 1891. The lowest rate was 17·69, recorded in Bareilly, which the Sanitary Commissioner remarks, "is obviously incorrect." Of the minor municipalities, in nine rates were recorded in excess of 50 per 1,000, the highest being 57·06, in Baghpat, in the Meerut district. The increase in the provincial death-rate, as will be seen, has coincided with a notable diminution of the urban mortality—a result doubtless due, as indicated by the Sanitary Commissioner, to the extensive sanitary works which have been carried out in the towns. There was a rise in the death-rate of infants corresponding with the increase of the general mortality during the year. The rate was 219·5 per 1,000, which is yet 18·9 under the decennial average. The death-rates per 1,000 of children between one and five years of age were 57·01 and 53·74 for males and females respectively. During all age periods, except from 15 to 30, the death-rates of males were higher than those of females.

There were 784,356 births registered in the Punjab during the year; calculated upon the population, according to the census of 1891, the birth-rate was 38·16 per 1,000. This shows a considerable increase over last year's rate, 34·02, and over the average of the previous five years which, calculated on the same population, was 35·76; indeed, with the exception of 1884, more births were registered in the province in 1892 than in any year since registration was begun. The Sanitary Commissioner attributes the improved birth-rate in part to greater accuracy in registration, but in a measure also to the fact that the year 1891 was fairly healthy. Among the districts Sialkot as usual returns the highest birth-rate, 50·80 per 1,000, the districts of Gujranwala and Gurdaspur came next with 46·53 and 46·17 respectively, while in accordance with the experience of past years the lowest birth-rates were registered in the frontier districts and in Simla. During the last five years the highest birth-rates have on an average been recorded in the districts of Sialkot, Gurdaspur, Jullundur, Amritsar, and Gujranwala; and in these districts the infant mortality is above the provincial average. The same peculiarity is to be observed in the irrigated villages of the Delhi district. The Sanitary Commissioner suggests, as an explanation, that where a high infant mortality prevails, mothers cannot as a rule nurse children for two or three years, and so bear children at shorter intervals of time. In the municipal towns the average birth-rate was 38·68 per 1,000, the highest rate, 51, being recorded in Kaithal, and the lowest, 25, in Sadhaura in the Umballa District. There were 113·87 male births registered for every 100 female in the province as a whole, and as usual the excess of male births was greatest in the frontier districts, Peshawar leading with 154·35 boys to 100 girls. In the province generally the death-rate exceeded the birth-rate by 11·32 per 1,000, and in all but two districts the number of deaths was greater than the number of births. The exceptions were Gurgaon and Jullunder, where the excess of the birth over the death-rates was only ·71 and ·23 per 1,000 respectively.

Excluding such as occurred among Europeans and Eurasians, and in military cantonments, there were registered in the province 1,017,023 deaths, the rate calculated on the census figures of 1891 being 49·48 per 1,000. This death-rate is the highest on record; it is 20·35 per 1,000 higher than the rate of 1891, and 18·44 per 1,000 higher than the average rate of the years 1886-90, calculated on the same population. With the single exception of Simla, the registered death-rate was higher in every district than the average of the previous five years. In the eastern districts the mortality was somewhat above the average, in the midland districts the excess over the average was greater, and in the western districts the death-rate was more than twice the average of the previous quinquennium. The highest death-rate was registered in the district of Bannu, and was 66·69 per 1,000; the next in order were Gurdaspur (63·18), Sialkot (62·44), Montgomery (57·85), Shahpur (56·58), and Multan (56·38). The lowest death-rate was recorded in the Simla district, 23·01 per 1,000, the next lowest being returned from Rohtak (36·97), and Dera Ghaz Khan (38·45). The average death-rate in the

municipal towns was 54·22, the highest 90 per 1,000, and the lowest 36 per 1,000, being returned from Tanda *cum* Urmar and Kartarpur, in the Jullundur district, respectively.

The abnormal mortality in the province was due to excessive outbreaks of cholera, fever, and influenza. In the Punjab, ordinarily, the highest percentage of deaths occurs in October; this was especially the case in the year under review, the percentage of the total deaths recorded in this month being 19·0 against 13·4, the average percentage of the total mortality recorded for October in the previous 11 years. The death-rate among females exceeded the death-rate among males by 2·55 per 1,000. In infancy, and in the age-periods between 40 and 60, the death-rates of males were higher than those of females. In all other age-periods the death-rates of females were higher. As might be expected in this exceptionally unhealthy year, the mortality among the infant population was very high, and the deaths of 117,418 male and of 110,536 female infants were recorded. If these figures are calculated on the number of male and female children born during the year, the death-rates are found to be 281·16 and 301·40 for males and females respectively. The Sanitary Commissioner remarks: "It is well known that female infants are not so well clothed and looked after in other respects as male infants are, and it is therefore probable that considerably more female infants fell victims to disease in the very unhealthy year, 1892, than the better cared for male infants."

In 1881 the total population of the registration circles in the Central Provinces was 8,817,185; in 1891 it was 9,501,401, showing an increase of 7·76 per cent. The number of births registered in 1892 was 364,745, and the birth-rate, the lowest since 1886, was 38·39 per 1,000. The districts of Damoh, Murwara, Nimar, Betul, Chhindwara, and Wardha returned birth-rates of 40·00 per 1,000 and over, the highest rate being in Chhindwara, where it was 45·03. The lowest birth-rate was registered in the Berhampur district, 34·79 per 1,000. In the *sadar* towns the average birth-rate was 26·63. For the whole province the excess of male over female births was 6·95 per cent., the highest ratio being 16·27, recorded in the Berhampur district, the lowest 3·32 in Bilaspur. In three districts, Raipur, Bilaspur, and Sambalpur, the deaths exceeded the births; this was due to the prevalence of cholera. In the remaining 17 districts the births were in excess, the highest ratio of excess, 20·45 per 1,000, being in Chhindwara. The number of deaths registered was 324,348, a larger number than in any of the last ten years except in 1889, when 386,155 were recorded. The death-rate was 34·14 against 32·98 in 1891, calculated on the census figures of that year. Of the districts Raipur had the heaviest death-rate, 46·66 per 1,000, and the registered death-rate was lowest in the Chhindwara district, 24·58. In the *sadar* towns the average death-rate was 27·02. The percentage of deaths of infants to the total deaths registered was 29 against 30 in 1891. Among Muhammadans the ratio of deaths per 1,000 of population was 28·67; among Hindus 30·47, and among other classes 55·67.

In Berar the total number of births registered in 1892 was 113,640, or 8,115 less than in the previous year, and the birth-rate was 39·9 against 42·8. There was a decrease of births in all districts. The highest rate, 43·7, was recorded in the Akola district; Basim, with 36·5, and Wun, with 33·1, come next. Of the towns, Wadegaon had the highest birth-rate, 52·1, and Basim the lowest, 26·0. In the case of the latter the Sanitary Commissioner indicates how faulty the registration of births is—of 20 children born during the year, selected by him, ten had not been registered. The proportion of male to female births was 104·6 to 100. The proportion of still births to live births was 4·2 per cent., made up of 2·5 per cent. males and 1·7 per cent. females. There were 82,124 deaths registered during the year, the death-rate being 28·8 per 1,000 of the population. For every 100 females that died, 112·6 male deaths were recorded. In the districts the death-rate ranged from 33·2 in Ellichpur to 24·0 in Wun. Among the towns the highest mortality was registered in Balapur, 44·1; in Hiwarkhed and Pusad also were recorded death-rates over 40 per 1,000, and in Barsi Takli, Pathrot, and Kholapur the rates were high. In these towns the chief causes of death were fevers and bowel complaints, the results of their insanitary surroundings and impure water-supply.

In the Presidency of Bombay, including Sind, there were registered 650,667 births, a less number by 32,010 than that recorded in 1891. The birth-rate for 1892 was 34·57 per 1,000, against 36·27 in the previous year, and a mean of 35·16 for the preceding ten years. The highest rate was recorded in the Southern registration district, 38·43, and the lowest, 23·41, in Sind, where registration is stated to be defective. Of the 24 collectorates, in five, Nasik, Thana, Kolaba, Ratnagiri, and Kanara, the recorded births were more numerous in 1892 than in 1891, in each of the

remainder there was a decrease. The recorded birth-rates among the urban and rural populations were respectively 28·24 and 35·46, against 28·63 and 37·34 in 1891. In most of the collectorates the birth-rate was higher among the rural than among the urban population, but in five collectorates (four of which are in Sind), viz., Karachi, Hyderabad, Thar and Parkar, Shikarpur, and Ratnagiri, the urban rate was much higher than the rural. Of the rural registration circles, in ten the recorded birth-rate was above 50 per 1,000; in 61 between 40 and 50; in 86 between 30 and 40; in 40 between 20 and 30, and in 25 it was below 20. Of the last 25 circles 22 are in Sind. Of the 56 towns in the Presidency, 14 had a birth-rate exceeding 40, and in five, namely, Broach, Jacobabad, Bombay, Mahad, and Thana, rates under 20 per 1,000 were recorded. The ratios ranged from 53·85 in Vengurla to 16·67 in Thana. For every 100 female births 107·54 male births were registered, but in the city of Bombay, in Kanara, Kaira, and Ahmedabad, the proportion of male births was somewhat higher, and in the collectorates of the Sind registration district, much higher. In the whole Presidency the percentage of still-born children was 0·98; in the city of Bombay 9·32, and in Kanara 4·68.

The death-rate was 32·50 against 27·26 in 1891, the recorded number of deaths being 611,742 in 1892, against 513,132 in the previous year. The highest rate, 40·03 per 1,000, was returned from the Gujrat, and the lowest, 28·12, from the Central, registration district. Of the collectorates, the highest rate, 47·51, was recorded in Ahmedabad, and the lowest, 20·93, in Ratnagiri. The recorded death-rates among the urban and rural populations were respectively 36·13 and 32·00 per 1,000, against 29·45 and 26·96 in 1891. Of the *talukas* or rural registration circles, 42 recorded a death-rate over 40 per 1,000; 90 between 30 and 40; 77 between 20 and 30, whilst in 13 the death-rate was under 20. The death-rates in the towns varied from 63·82 in Umarkot to 16·60 in Karwar. The rates of deaths of infants under one year of age, per 1,000 living, were 190·20 and 166·86 for males and females respectively, and the ratios for male and females over one year and under five were 60·96 and 56·43. Between the ages of 10 and 40 the female death-rate was higher than the male; for all other ages the male death-rate was the higher.

In Madras, in 1891, there were registered 924,238 births, in 1892 the number was 845,029, showing a decrease of 79,209. Last year the birth-rate was reported to be 32·4 per 1,000, but this was calculated on the census figures of 1881; adopting the figures of 1891 the rate is reduced to 27·4. In 1892 the birth-rate was only 25·1 per 1,000. The low birth-rate in Madras is of course in part due to defective registration, but the contention of the Sanitary Commissioner, that the diminution was due to the prevailing scarcity, is borne out by the fact that the diminution was greatest where the distress was most severely felt. In all the districts, except South Canara and the Nilgiris, the birth-rates were lower than the average of the previous 10 years. In 19 districts the rates were lower than in 1891; in the remaining three, Godavari, South Canara, and Tinnevely, they were somewhat higher. In no district was the birth-rate above 36·8 per 1,000; in four only was it above 30; in 17 it was between 20 and 30; and in one district, Ganjam, it was below 20 per 1,000. The highest birth-rates were recorded for the districts of Madras (36·8), and Bellary (32·5); the lowest for Malabar (20·4), and Ganjam (17·8). Of the rural registration circles, from one a birth-rate was returned of over 40 per 1,000, and from 36, rates ranging from 30 to 40. In 115 the rates were between 20 and 30, and in 27 below 20 per 1,000. In the 55 municipal towns the average birth-rate was 29·9 per 1,000, the rates ranging from a maximum of 41·3 in Vaniyambadi to minima of 20·9 in Vizianagram and Trichinopoly. In only two towns were the birth-rates over 40 per 1,000 of the population, from 33 rates were returned between 30 and 40, and from 20 between 20 and 30. In the Presidency for every 100 female births registered there were recorded the births of 104 males. As in past years, the total number of births exceeded the total number of deaths, but in 1892 the excess was at the rate of only 2·8 per 1,000 of the population. In seven districts more deaths than births were registered, the greatest excess of death over birth-rates being in the districts of Madras and Godavari.

The total number of deaths recorded was 750,755, giving a death-rate of 22·3 per 1,000 against 22·2 in 1891—a higher death-rate than in any year since 1878. The highest death-rate was recorded in Madras, 46·5, a marked decrease as compared with last year when the rate was 53·1. The next highest death-rate was 35·1 in the Kurnool district, where fevers were very prevalent, and the lowest death-rate, 14·3, was returned from the district of Ganjam, where, however, registration is very imperfectly carried out. In five registration circles death-rates above 40 per 1,000 were recorded, in 20 the rates were between 30 and 40, in 87 between 20 and 30, and in 67 below 20.

The average death-rate of the municipal towns was 29·4 per 1,000, or 7·5 higher than the district rate. The ratios varied from 55·2 in Kurnool, where cholera and fever were rife, to 18·2 in Salem. The death-rate among infants under one year of age was 173·9 per 1,000, calculated on the number born during the year.

In Coorg the number of births registered was 3,829, giving a ratio of 22·12 per 1,000 against 20·31 in 1891. The proportion of males to every 100 females born was 103·99. As is usually the case, the death-rate exceeded the birth-rate, the excess this year being 8·49 per 1,000 of the population. The deaths registered aggregated 5,299, and the death-rate per 1,000 was 30·62, compared with 21·79 in 1891, and 21·77, the mean ratio of the previous five years. The number of deaths amongst males, compared with the number of deaths amongst females, was as 126·84 to 100. In Mercara, the only considerable town in the province, the death-rate was 31·98 against 20·04 in 1891.

The total number of births registered in Lower Burma was 112,070, and the birth-rate per 1,000 of the population was 24·83 against 20·74 in 1891, and 22·15, the mean ratio of the previous five years. The ratios range from 37·44 in the Sandoway district to 18·36 in Shwegyin. Although registration in the districts is very defective, there has apparently been improvement in all except Tharrawaddy and Mergui. In the towns, however, little or no improvement can be recorded, for in 12 out of the 25 municipal towns containing populations of 5,000 and over, the results were worse than in 1891. The average birth-rate for the towns was 21·80; the ratios varying between 49·92 recorded in Myanaung, and 15·59 in Rangoon. In all districts, except Sandoway, there was an excess of male births, and taking the province as a whole, 107 males were born for every 100 females. The births exceeded the deaths in the ratio of 5 per 1,000 of the entire population; but in the Hanthawaddy and Akyab districts the deaths were in excess of the births,—a result mainly induced by the preponderance of the male sex among the large population of Indian immigrants in the towns of Rangoon and Akyab in these districts. The deaths numbered 90,233, and the death-rate was 20·00 per 1,000 against 15·93 in 1891, and 18·00 the average of the previous five years. The highest district rate was 29·91, recorded in Akyab, the lowest, 12·55, in Tavoy. In the towns the average death-rate was 29·31, and the rates varied from 38·80 in Paungde to 12·99 in Zalun. In the province, as a whole, the percentage of male to female deaths recorded was 128. In 1892 the seasonal distribution of mortality corresponded fairly closely with the experience of former years, the heaviest mortality occurring during the rains and the lightest during the hottest months. The death-rates among infants under one year of age were 181·01 and 126·93 per 1,000 for males and females respectively; among children over one year and under five years of age the rates were 27·66 for boys and 23·50 for girls. At all age-periods, except between 20 and 30, the male death-rates were the higher.

History of Chief Diseases.

Cholera.

The total number of deaths due to cholera, recorded in India during 1891, was 601,603; and it was observed in the report for that year that this was the highest figure in any year since 1877, when there were 635,977 deaths from this cause. In 1892, however, cholera prevailed with greater intensity than in either of those years, and the number of deaths due to it was 762,695. The following table shows that, excepting Madras, Assam, Berar, and the Native States of Central India and Hyderabad, every province participated in this increase as compared with 1891, and that the excess was most marked in the Punjab, Rajputana, Bombay, Mysore, and Lower Burma. A comparison of the mortality in individual provinces from 1877 to 1892 shows that in Bengal, Punjab, Rajputana, Mysore, and Coorg, the number of recorded deaths from cholera was never so great as in 1892.

Statement showing the Deaths from Cholera in the different Provinces in India from 1877 to 1892.

YEAR.	Bengal.*	Assam.	North-Western Provinces and Oudh.	Punjab.	Central Provinces.	Berar.	Rajputana.	Central India.	Bombay.	Hyderabad.	Madras.	Mysore.	Coorg.	Lower Burma.
1877 -	155,805	11,377	31,770	29	3,418	842	60	928	57,228	7,414	357,430	2,902	†	7,376
1878 -	95,192	6,732	22,221	215	40,985	34,306	2,393	8,047	46,743	6,696	47,167	723	49	6,759
1879 -	136,368	17,415	35,892	23,135	27,575	223	918	2,734	6,987	6	13,296	14	†	1,828
1880 -	39,648	2,803	71,546	274	330	1	—	293	684	—	613	25	—	2,638

* Excluding Calcutta.

† Statistics not available.

YEAR.	Bengal.*	Assam.	North-Western Provinces and Oudh.	Punjab.	Central Provinces.	Berar.	Rajputana.	Central India.	Bombay.	Hyderabad.	Madras.	Mysore.	Coorg.	Lower Burma.
1881	79,180	5,010	25,965	5,207	9,140	3,404	197	581	16,694	1,721	9,146	25	3	5,239
1882	182,352	21,055	89,372	39	11,932	3,773	1,327	1,562	7,904	150	23,804	893	31	7,177
1883	90,439	14,903	18,160	190	16,235	27,897	797	1,740	37,954	1,947	36,294	121	—	2,185
1884	134,421	22,276	30,143	614	119	87	1,297	1,013	13,804	2,479	75,176	330	—	5,515
1885	173,767	7,753	63,437	1,933	21,868	3,683	1,615	4,624	37,287	1,387	53,109	2,677	—	7,685
1886	118,368	20,188	34,565	12	16,679	976	173	290	187	499	12,417	10	—	4,027
1887	172,378	7,941	209,623	8,804	12,576	14,396	2,612	8,868	25,711	2,831	28,359	882	3	2,649
1888	111,891	9,693	13,704	14,933	921	305	32	191	36,500†	2,057	58,977	1,915	2	15,982
1889	171,103	13,288	48,494	2,833	52,538	10,925	6,923	3,344	32,431	1,128	76,020	1,590	9	3,240
1890	145,885	15,396	86,395	3,401	4,737	847	2,746	3,132	3,259	—	35,288	1,326	5	1,076
1891	229,575	23,882	169,013	10,107	21,312	7,958	2,946	13,474	17,850	3,102	98,773	1,204	7	2,400
1892	259,398	21,552	194,886	73,959	39,972	2,030	26,760	8,384	42,900	58	79,033	5,497	58	6,208

* Excluding Calcutta.

† Including four deaths, the monthly distribution of which is not known.

As will be seen from the following statement the disease showed signs of slight subsidence in February; but from March it began to prevail with increasing severity until it reached its highest point in May, thereafter it began to decline steadily, and was at a minimum in December.

Statement showing the Deaths from Cholera registered in the different Provinces by months, during the year 1892.

PROVINCE.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Total.	Ratio of Deaths per 1,000 of Population.	
														1892.	1891.
Bengal	11,362	11,140	31,235	39,725	56,280	37,593	25,629	18,345	4,687	3,168	10,559	9,675	259,398	3.68	3.26
Assam	721	1,013	1,887	2,279	2,509	2,209	1,316	773	1,750	1,960	2,392	2,743	21,552	4.29	4.76
North-Western Provinces and Oudh.	949	697	3,437	31,913	58,087	39,066	19,155	9,923	12,587	13,982	4,193	897	194,886	4.15	3.60
Punjab	60	18	58	6,834	25,252	21,203	11,265	5,444	4,613	1,116	96	—	75,959	3.70	0.49
Central Provinces	4	148	2,123	5,887	8,474	10,170	7,538	3,963	1,218	312	117	8	39,972	4.21	2.42
Berar	—	—	—	37	263	137	277	402	431	309	139	15	2,030	0.7	2.8
Lower Burma	459	52	678	858	794	527	824	588	476	245	132	105	6,208	1.38	0.52
Madras Presidency	18,676	6,874	4,601	3,652	4,417	5,967	16,739	13,003	3,462	878	490	286	79,033	2.3	3.5
Bombay Presidency	666	1,008	1,672	3,078	6,050	8,089	14,694	5,238	1,562	436	215	192	42,900	2.28	0.95
Mysore	104	208	393	1,618	1,753	664	275	126	24	52	71	9	5,497	1.13	0.25
Coorg	—	—	—	7	6	—	—	18	23	3	1	—	58	0.33	0.04
TOTAL	33,001	21,628	46,089	96,088	163,885	125,635	97,712	57,828	30,833	22,459	13,405	13,930	727,493	—	—

The severity of the disease in the different provinces, and its relative prevalence in the urban and rural circles, together with information under other heads, are shown in the subjoined table:—

PROVINCE.	Mortality in 1892.	Mean Mortality of previous Five Years.	Urban Mortality.	Rural Mortality.	Per cent. of Villages attacked.	Maximum Mortality in any one Rural Circle.	Maximum Mortality in any one Town.	Month of Maximum Prevalence.
Bengal	3.68	2.34	5.05	3.62	10.7	15.00	21.05	May.
Assam	4.29	3.0	4.53	4.29	18.1	7.45	24.18	December.
North-Western Provinces and Oudh.	4.15	2.29	1.99	4.31	18.2	19.32	60.08	May.
Punjab	3.70	0.39	2.90	3.76	18.2	11.36	10.89	May.
Central Provinces	4.21	2.05	1.47	4.46	10.7	13.66	16.76	June.
Berar	0.7	2.4	1.3	0.6	2.5	1.3	16.0	September.
Lower Burma	1.38	1.36	2.28	1.25	8.6	3.42	11.14	April.
Madras	2.3	1.8	3.2	2.3	17.5	6.6	36.1	January.
Bombay	2.28	1.38	1.88	2.34	12.2	9.54	12.11	July.

Compared with the mean mortality of the preceding five years the death-rates in 1892 were greater in all the provinces with the exception of Berar. In Bengal, Assam, Berar, Lower Burma, and Madras, the town mortality was greater than that which occurred among the rural population, while in the remaining four provinces the case was just the reverse; in the North-Western Provinces and Oudh and the Central Provinces the excess of rural mortality was very marked. The disease was most widespread in Assam, the North-Western Provinces and Oudh, the Punjab and Madras, whereas in Berar it was confined to a very limited area. Excepting Bengal, the North-Western Provinces and Oudh, and the Punjab, in all of which the maximum mortality occurred in May, in all the other provinces the months when the mortality was greatest varied.

In Bengal, in 1892, there were registered as due to cholera 259,398 deaths against 229,575 in 1891, and 165,172 the average of the five years 1887-91. The death-rate in 1892 was 3·68 per 1,000 of the population, ·42 in excess of the rate of the previous year, and 1·34 above the average of the quinquennium 1887-91. In spite of this apparent increase, the Sanitary Commissioner does not consider that cholera was more prevalent in the year under review than in 1891, but ascribes the seemingly higher mortality to improved registration. Of the nine divisions Orissa suffered most, and Rajshahi least, the death-rates being respectively 12·09 and ·68 per 1,000. As in 1891, the disease was present in every district in every month of the year; the greatest mortality occurred in Balasore, where 15·00 per 1,000 of the population died of cholera, and the least in Purnea, where the death-rate was ·14. The average mortality of the district population was 3·62 per 1,000. The urban population suffered more than the rural, the average death-rate for the towns being 5·05 per 1,000. In four towns, Dinajpur, Muktagachha, Sherpur, and Kishengunj, no death from cholera was recorded, in the others the death-rates ranged from 21·05 in Raniganj and 16·49 in Puri to ·13 in Purnea and ·07 in Rangpur.

The period of the heaviest incidence of the disease in the province as a whole was from March to June. The first five months of the year were practically rainless, and the temperature was above the normal, as results of these conditions there was a progressive deterioration of the supply of drinking water, scarcity of food, and consequent lowered vitality of the people. The cholera mortality advanced from the beginning of the year and reached its maximum in May; receding with the onset of the rains to a minimum in October, it rose again rapidly in November. The rise after the cessation of the rains, was, in the opinion of the Sanitary Commissioner, due to lowering of the subsoil water.

The most remarkable facts concerning the distribution of the disease in Bengal during the year were these:—Balasore, Puri, and Cuttack, which were comparatively free from cholera in 1891, suffered terribly in 1892, while Purnea, Jalpaiguri, and Rangpur, in which cholera was most prevalent in the former year, enjoyed a remarkable immunity in the latter. The causes which apparently led to the great severity of the disease in Orissa were identical with, but greater in degree than, those which determined its prevalence in the province generally. Drought in October of 1891, failure of the winter rains, and a rainless spring, resulted in an unprecedented scarcity of water. When to this is added the effects of the severe cyclone which swept over the country in November 1891, we have those conditions which are favourable to the prevalence of cholera; exposure, scarcity of food, and a deficient and extremely polluted supply of water. In his interesting note regarding the condition of affairs in Balasore, the Magistrate, Mr. Cornish, writes:—

“The outbreaks are far too simultaneous and widespread, and occur at too great a distance from the pilgrim routes to allow us to attribute them to the passage of pilgrims. As to the immediate cause, I cannot do better than repeat what I wrote three years ago. In their eagerness to save the winter rice imperilled by the October drought the raiyats everywhere use for irrigation purposes every available drop of water, with the result that by February there is little left for drinking purposes. In the year under report January, February, March, April, and two-thirds of May were, with the exception of one extremely local storm at Bhadrak, practically rainless. Tanks failed, streams went dry, and cholera was universal. As usual, Jelasore with its good supply of Subarnarekha water suffered least.”

In the port of Calcutta, in 1892, the average number of European seamen was 2,133; there were 12 cases of cholera, and seven died. The ratio of deaths per 1,000 was 3·28, the lowest on record.

In Assam the total registered mortality from cholera was less than in the previous year, the number of deaths being 21,552 in 1892, and 23,882 in 1891, and the death-

rates 4·29 and 4·76 respectively, against 2·84 in the quinquennial period 1886-90. There was an increase, compared with 1891, in the recorded number of fatal cases in the Kamrup, Sylhet, Sibsagar, Lakhimpur and Khasi and Jaintia Hills districts; in the remaining districts there was a decrease. In the Surma and Assam Valleys deaths occurred in every month in the year, the disease in the former was most prevalent from September until the end of the year, especially in December; in the latter it was most severe from March to July. Of the *sadar* towns Tezpur, Silchar, and Gauhati, in the order given, were most severely affected. In Shillong only one death from cholera was recorded.

The total number of immigrants into the Province of Assam during the year was 56,050. Of these, 19,916 went to the Surma Valley, and 36,134 to the Assam Valley, a percentage increase over the figures of 1891 of 14·00 and 11·39 respectively. No special explanation of the increase is given, but it was probably due to the opening out of new gardens and extension of cultivation. From the recruiting districts 25,421 immigrants for the Assam Valley started for Dhubri. Of these 11,768 travelled *viâ* Goalundo and 13,308 by way of Kaunia-Jatrapur, 47 died *en route*, and 259 were detained on account of sickness. The number of labourers and dependents despatched from Dhubri was 24,517, of whom 62 died on their way to the gardens. Besides these, 11,296 immigrants were shipped at Goalundo for gardens in the Assam Valley, amongst whom 20 deaths occurred between Goalundo and Dhubri; three between Dhubri and Gauhati; 15 between Gauhati and Tezpur; and 13 between Tezpur and Dibrugarh. The total numbers of casualties among immigrants during their passage through the Assam Valley, were, at Dhubri 70, of which 59 were due to cholera; on board steamers 62, including 48 cholera deaths; and at the various ports of debarkation 126 persons died of cholera, and 20 from all other causes. The total number of deaths from cholera were 233 against 83 in 1891. Regarding the immigrants into the Surma Valley the sources of information were less complete, and the following figures refer only to coolies imported under the Act, who passed through the depôts. For Cachar 3,457 coolies left Goalundo, of whom 64 died, 29 *en route*, and 35 in hospital. For Sylhet 2,399 left Goalundo, one died *en route*, and 10 in hospital. Of the total number of deaths, 54 in the case of Cachar, and 10 in the case of Sylhet, were due to cholera.

The exceptionally high mortality from cholera in the North-Western Provinces and Oudh in December of 1891 indicated the probable recrudescence of the disease in the spring of 1892. This indication was fulfilled, and the number of deaths registered reached the high figure of 194,886. In the two previous great epidemics the numbers of deaths recorded were 169,013 in 1891, and 200,628 in 1887; the death-rates per 1,000 of the population for the three years being 4·15, 3·60, and 4·54 respectively. In the epidemics of 1891 and 1887 the highest monthly mortality occurred in June, in 1892 the maximum was in May, when 58,037 deaths were registered, considerably the highest number recorded as due to cholera, in these provinces, in any one month. The mortality was exceptional in Dehra Dun and in the hill tracts of Garhwal and Almora. In Dehra Dun the death-rate was 18·13 per 1,000, in Garhwal 14·57, and in Bahraich 13·80. The cholera mortality was also exceptional in Bara Banki (12·71), Almora (12·40), Gonda (11·16), and Sitapur (10·08). There was excessive mortality in the districts of Partabgarh, Basti, Fyzabad, Kheri, Pilibhit, Sultanpur, and Hardoi, where the death-rates ranged from 8·97 to 5·02, and in the Tarai and hill tract, including the district of Naini Tal, the death-rate was 7·07. In Ghazipur the mortality was one per 1,000, and in the districts of Muttra, Muzaffarnagar, Cawnpore, Farukhabad, Etah, Etawah, and Saharanpur it was less. The municipal towns, on the whole, enjoyed a marked immunity from the disease, and the ratio of mortality in the towns of the province was 1·99 compared with 4·31 the rural, and 4·15 the provincial ratios. In the towns having a population over 40,000, the death-rate from cholera ranged from 3·53 in Fyzabad and Ajudhia and 2·29 in Benares, to ·33 in Agra and ·23 in Farukhabad. In some of the minor towns, however, the death-rate from cholera was most excessive, and in a non-municipal town of the Sitapur district called Laharpur, with a population of 11,452, the death-rate from cholera was 60·08 per 1,000, in Balrampur it was 15·69 and in Rudauli, in the Bara Banki district, it was 8·58.

At the *Magh mela* at Allahabad, in January, there was no cholera, and only three deaths from the disease were recorded in the whole district of Allahabad during the month.

For five years in succession cholera had appeared in the Punjab in epidemic form, and in 1892, the sixth year, there raged an epidemic of much greater severity than any that has occurred since 1867. In that year 43,146 deaths were recorded as due to cholera, but at that time no proper arrangements for death registration had been

completed, and the mortality was probably greatly under-estimated. In 1892, 75,959 deaths were recorded, equal to a death-rate of 3·70 per 1,000. During the year the climatic conditions were peculiar. A higher temperature than usual until the end of May, and a rainfall that, during the first six months of the year, was very deficient, led to a serious scarcity of food stuffs in many parts of the province, and a general diminution of the supply of water. In the submontane tracts many of the streams were dried up, and the water level in the tanks and wells was much lower than usual. The water supply was not only scanty, but was in consequence more than ordinarily impure. In the Punjab, the cholera death-rate is generally greatest in August, then comes September, and next in order July, June, and May. In 1867, the percentage of cholera deaths in May and June was much above the average; in 1892 this peculiarity of monthly distribution was much more marked; about one-third of the registered deaths occurred in May, and more than one-fourth in June, while only 7·2 per cent. of the total occurred in August. In the end of 1891 cholera was present in Bannu, and between the 1st and the 9th January 1892, when the outbreak ceased, 60 deaths from cholera occurred in that district. Early in February there was a smart outbreak in a village of the Kohat district, but from the 7th of February until the 24th of March, not a single cholera death was recorded in the province. Between the 24th and 31st of March cholera appeared in 14 districts, and before the end of April in other 16; the remaining district, Dera Ghazi Khan, escaped until the 11th of June. The Sanitary Commissioner attributes the severity of the outbreak in part to the Hardwar fair. The cholera death-rate in the rural circles of the districts was 3·76. The highest rate, 11·36 per 1,000, was returned from Bannu, the next highest rates were recorded in Kurnal, Montgomery, and Hissar, 9·35, 7·36, and 7·13 respectively. Muzaffargarh had the lowest death-rate, ·42 per 1,000, and Simla ·58, Hoshiarpur ·48, Gurdaspur ·61, and Jullundur 1·0, were the next in order. In the towns the death-rate from cholera averaged 2·90 per 1,000, and ranged from 10·89 in Dera Ismail Khan to ·10 in Sadhaura in the Umballa district. There was no death registered in Tanda and Umar in the Hoshiarpur district.

In the Central Provinces the total number of deaths from cholera registered was 39,972, and the death-rate in the province from this cause was 4·21 per 1,000. Of the 160 registration circles into which the province is divided, cholera was more or less prevalent in 127. The disease was most severe in the Chattisgarh division, it also prevailed in the Northern and Central districts, the Eastern part of the province was comparatively free. The highest death-rates were recorded in Raipur 13·50, Bilaspur 8·25, and Sambalpur 4·84. The conditions favouring the spread of cholera are only too patent. Filth, sodden village sites, and a water-supply polluted in every possible way, the latter evil being especially intensified in the year under report by deficiency of the winter rains and a late monsoon, conditions attended by a temperature in excess of the average during the first half of the year. Moreover, in 1892, although the rice crop was good and the outturn of wheat fair, the return of the other food grains was deficient, and the demand for wheat for export forced up prices, so that the pinch of poverty was felt by the poorer classes.

Cholera was prevalent throughout the whole of Berar in 1892, the highest mortality being in the Buldana district (1·3), and the lowest in Basim (·2). The total number of deaths was 2,030 against 7,958 in 1891, and 4,413 the mean of the previous five years. The death-rate from cholera was ·7 against 2·8 per 1,000 in 1891.

During 1892, 42,900 deaths in the Bombay Presidency were attributed to cholera, and the ratio of deaths per 1,000 of the population was 2·28 against ·95 in 1891 and 1·38, the mean of the previous five years. Of the collectorates, Karachi, Dharwar, and Hyderabad, where the death-rates were 9·98, 7·91, and 6·28 respectively, were the most severely affected, and the least mortality occurred in Bombay City, Ratnagiri, and Broach, in which the ratios were ·20, ·08, and ·05 respectively. Out of 222 rural circles of registration, 189 were more or less affected by cholera during the year, and in 37 the death-rate was upwards of 5 per 1,000. Out of 56 town circles, 44 returned fatal cases of cholera, and in 11 the death-rate was over 5 per 1,000. Of the 25,206 villages in the Presidency, in 3,080 cholera was present, the highest percentage of villages attacked was in the Karachi district, where 424 out of 792 villages were affected, equal to 53·60 per cent. The proportions of villages attacked in the districts of Belgaum, Dharwar, Hyderabad, Shikarpur, and Upper Sind Frontier were also high. The great fair held in July at Pandharpur passed off without any serious outbreak of the disease; the first case did not occur until the fair was practically over, and only

27 deaths occurred in all. Cholera was prevalent only to a very slight extent in the Sholapur Collectorate, in which Pandharpur is situated; and in this connexion the Sanitary Commissioner states that in his experience cholera occurs at fairs only when it is previously prevalent in the district in which the fair is held.

The number of deaths registered as due to cholera in Madras in 1892 was 79,033, being 19,740 less than in 1891. The death-rate from this cause was 2·3 per 1,000. In no month of the year was the disease absent, but there was a very great decrease in the mortality during the three last months of the year. The greatest numbers of deaths were registered in January (18,676), July (16,739), and August (13,003), and the smallest in October (876), November (490), and December (286). The disease was most severe in the Godāvāri, Kurnool, and Tanjore districts, where the death-rates per 1,000 were respectively 6·5, 6·0, and 4·1. In the first two of these districts the very deficient rainfall of 1891 was followed by a rainfall much above the average in 1892. Out of 44,678 villages in the Presidency, 17·5 per cent. were attacked, the highest ratio was recorded in the Kurnool district, where 36·0 per cent. of the villages were affected. The disease was more severe in urban than in rural circles, the death-rate in municipal towns being 3·2 per 1,000 of the population. The highest death-rates are returned by Periyakulam 14·7, and Anantapui 11·5 per 1,000. In two municipalities, Palni and Ootacamund, no death was recorded.

Fifty-eight deaths were registered in Coorg as having been caused by cholera; the death-rate from this cause was 0·33, the mean ratio per 1,000 for the previous five years having been 0·03.

In 1892, in Rajputana, a severe visitation of cholera caused 26,760 deaths. The disease was epidemic in Bikanir at the beginning of the year; in April it appeared in many different and distant parts of the province, and the distribution soon became general. The severity of the epidemic increased during May and reached its maximum in June. The mortality in July was great, but it declined in August and September, and towards the end of the year became slight. The States that suffered most were Marwar, Bikanir, the British district of Ajmere-Merwara, Jeypur, and Ulwar. In parts of the three first named there was scarcity, in some places approaching famine, during the greater part of the year, and the water-supply was very deficient.

During the year, in Lower Burma 6,208 deaths were recorded as due to cholera, the death-rate per 1,000 of the population attributed to this disease being 1·38. The Arakan division suffered most severely, the death-rate there having been 2·91. Of the 16 districts, cholera deaths were reported from all except Tavoy and Mergui. The largest numbers of deaths were returned from Akyab (1,592), Bassein (1,072), and Henzada (727). Out of 118 circles of registration and 17,414 villages, 96 and 1,497 respectively, reported deaths from this cause. In Akyab town cholera was very prevalent in the latter part of February and in March, the epidemic died away in April and May, but fatal cases again became frequent in June and July, in which months 55 and 41 inches of rain respectively were registered. In Bassein town cholera broke out in January and lasted until June. In Toungoo the first case occurred on the 4th of May, the first day on which rain fell, and the epidemic attained its greatest intensity in June and July, the two months of heaviest rainfall.

The following is a summary of the reports regarding the outbreak of cholera in regiments and jails:—

Among European troops the disease appeared on 38 occasions. In six instances the men first attacked had been exposed to unusual fatigue, and in one case the disease declared itself after prolonged exposure to the heat of the midday sun. In 22 cases premonitory diarrhoea is stated to have occurred. In seven cases the seizure was connected with some dietary indiscretion, and in two cases with over-indulgence in alcoholic liquor. Among the native troops unusual fatigue is said to have been undergone by the first sufferers in 10 out of a total of 96 outbreaks, and in 34 cases the existence of premonitory diarrhoea is recorded. In 13 cases, excesses in eating immediately preceded the attacks. In two cases the abuse of alcohol was considered to be connected with the seizures. In the jails there were 65 outbreaks. In six first cases the disease supervened on unusual fatigue. The occurrence of premonitory diarrhoea was noted in 11 instances. At Thayetmyo two prisoners were admitted to jail suffering from cholera.

Among European troops diarrhoea seems to have been unusually prevalent during the occurrence of nine outbreaks, among native troops during seven, and in jails during 15.

In the stations in which cholera occurred among European troops, there were 720 buildings occupied by them, of these 85 or 11·8 per cent. furnished cases. The number of buildings occupied by native troops in the stations in which cholera was present among them was 8,343, and cases of cholera came from 239, or 2·8 per cent. In the jails 168 out of 1,117, or 15·0 per cent. of the buildings occupied by prisoners in infected jails furnished cases.

The disease appears to have occurred under nearly all possible variations of meteorological conditions.

Among European troops in nine of the 38 outbreaks cholera is said to have been imported or to have been brought from places where cholera was known to exist, and in other seven cases this was thought to have been the case. Among native troops the disease was said to have been imported in 31 cases and into the jails in 13 cases.

Attendants attacked.—The following statement shows the number and percentage attacked of those actually in attendance on persons suffering from cholera :—

COMMUNITIES.	Number of Cases of Cholera treated.	MEDICAL OFFICERS, HOSPITAL ASSISTANTS, AND OTHER ATTENDANTS ON CHOLERA CASES.		Percentage of Attendants attacked.
		Number.	Number of these attacked.	
European troops	231	485	6	1·23
Native troops	514	1,379	41	2·97
Jails	462	537	18	3·06
TOTAL	1,207	2,451	65	2·65

Sanitary defects in connexion with cholera epidemics.—In the returns regarding the European troops no sanitary defect is mentioned in this connexion, except in the cases of Ferozepore and Secunderabad; in the former of these places the surface drainage is stated to be imperfect, and in the latter the conservancy arrangements are said to have been defective.

Regarding the surroundings of the native troops attacked, deficient drainage is frequently the subject of complaint, and in a few instances overcrowding existed. At Fort Aijal and at Aurungabad the water supplies appear to have been bad, and at Dharmasala, Ajmere, Deoli, and Nusseerabad the supplies were insufficient. The surroundings of the troops at Barrackpore, Raichur, and Kohat were insanitary. At Kohat, while the supply of drinking water is good and is protected from contamination, a foul stream runs behind the lines of one regiment, and around a portion of the parade ground. The sanitary state of the environs of the cantonment is reported to be extremely bad.

In the affected jails imperfect drainage and overcrowding are frequently noted, and in a few cases the drinking water was bad.

Cholera camps.—The effects of moving into camp were generally satisfactory. European troops moved into camp from 20 cantonments in 86 parties. Cholera appeared in eight of these parties, and the total number of cases after leaving cantonments was 18. Thirty-six native batteries and regiments went into camp in 97 parties, 20 of the parties were attacked, and the total number of attacks after moving was 107. Forty-eight parties were encamped from 19 jails, and 74 seizures were recorded subsequent to removal.

Small-pox.

During 1892 the mortality from small-pox in India was heavier than in the preceding year; the total number of deaths being 101,121 in 1892 against 98,831 in 1891; and it will be observed from the following table that this increase was general almost all over the country, from only two provinces, Assam and the North-Western Provinces and Oudh, were smaller numbers of deaths returned from this cause than in 1891. Distributed according to months the greatest number of deaths occurred in March, and the least in November. The highest death-rates were recorded in Coorg, Mysore, and Madras, and the lowest in Berar and the Central Provinces.

Statement showing the Deaths from Small-pox registered in the different Provinces, by months, during the year 1892.

PROVINCE.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	TOTAL.		Ratio of Deaths per 1,000 of Population.	
													1892.	1891.	1892.	1891.
Bengal	2,221	2,972	4,093	3,354	2,936	1,864	1,335	977	533	448	626	1,000	22,359	16,193	0·31	0·23
Assam	78	190	208	141	237	99	76	101	64	48	67	143	1,452	2,361	0·29	0·47
North - Western Provinces and Oudh.	487	537	805	1,087	1,386	1,286	856	474	246	115	137	293	7,709	26,355	0·16	0·56
Punjab	965	655	766	1,193	1,985	1,732	1,404	723	407	349	343	601	11,173	3,426	0·54	0·17
Central Provinces	22	26	51	108	145	166	119	133	74	48	47	56	995	748	0·10	0·08
Berar	5	5	10	10	14	10	7	3	—	—	2	2	68	34	0·02	0·01
Lower Burma	49	58	151	105	99	165	146	163	106	76	120	225	1,463	1,326	0·32	0·29
Madras Presidency	5,405	6,437	6,872	5,728	3,802	2,878	2,612	2,261	2,039	1,888	1,619	2,116	43,757	41,322	1·3	1·4
Bombay	206	308	500	451	305	270	196	126	92	78	76	162	3,770	1,491	0·15	0·08
Mysore	745	888	786	781	853	802	827	719	551	478	489	543	8,462	5,099	1·75	1·05
Coorg	190	183	176	96	68	54	34	39	29	19	11	14	913	476	5·27	2·75
TOTAL	10,373	12,259	14,418	13,054	11,836	9,376	7,612	5,819	4,141	3,517	3,537	5,155	101,121	98,831	—	—

Although the mortality from small-pox in Bengal in 1892 was insignificant when compared with that from other causes, still it was the highest on record since 1882. The number of deaths registered as due to this disease was 22,359, equal to a death-rate of ·31 per 1,000. The disease affected 60 circles more or less severely, and was absent from 282. The largest number of deaths occurred in March (4,093) and in April (3,354). The prevalence of the disease to any serious extent was practically limited to Orissa, Chota Nagpore, and Midnapore, where, owing to the strong prejudices of the people, vaccination has made but little progress. It is hoped that, under the new decentralization scheme, to which reference was made last year, whereby civil surgeons have been made directly responsible for the vaccination of their districts, these parts of the province will be efficiently protected, and enjoy as great an immunity from small-pox as the rest of the province. The districts which suffered most were in order, Puri, Cuttack, Lohardaga, Midnapore, and Palamow. The urban mortality was the same as last year, ·48 per 1,000. Among children under 12 years of age there were 14,754 deaths,—nearly 66 per cent. of the total small-pox mortality; as the Sanitary Commissioner remarks, “nothing could show more clearly than these figures the necessity that exists for increased vigilance on the part of the Vaccination Department.”

In the port of Calcutta no death from small-pox occurred among the European seamen or among the Native floating population.

In Assam the number of deaths from small-pox was 1,452, and the death-rate ·29 per 1,000, against 2,361 deaths and a death-rate of ·47 in 1891. In Kamrup 1,025 deaths were registered, and the death-rate was 1·62. In Nowgong there was no fatal case; in the Khasi and Jaintia Hills only one death, and in Lakhimpur three deaths. Of the *sadr* towns, Gauhati had the highest death-rate, 3·24 per 1,000, while there was no death recorded in Sylhet, Dhubri, and Nowgong. In all the *sadr* towns 47 deaths occurred, and the average rate of mortality among their inhabitants was ·69 per 1,000. Of the deaths 229 occurred among infants under one year, and 869 among children under 12 years of age.

The deaths from small-pox in the North-Western Provinces and Oudh numbered only 7,709, and the death-rate, ·16, was the lowest on record since 1871. In no district was the mean ratio of the previous five years, ·73, exceeded. Only one death from small-pox was recorded in the Cawnpore district, two in Lucknow, and three in Meerut, the aggregate population of these three districts being 3,375,316. Of the larger municipalities, Moradabad had a death-rate of 1·47, Ghazipur 1·42; the next highest was Muttra, with ·53 per 1,000. Only one of the smaller municipalities returned a death-rate from small-pox higher than ·26 per 1,000, viz., Pilibhit, where the rate was 2·19. Of the 101 towns in the province with a population above 10,000, in 50 no death from small-pox was registered, while in 26, only one or two deaths occurred.

In the Punjab the number of deaths recorded as due to small-pox was 11,173, giving a death-rate of 0·54 per 1,000, which is very slightly (·02) above the average

for the last five years. As in 1891, the highest mortality occurred in the Bannu district, where the death-rate was 4·08 per 1,000. As noted last year, vaccinators have special difficulties to contend against in this district, the proportion of the population successfully vaccinated in 1891-92 being 27·13 per 1,000, against 33·24, the average rate in the province. The next highest mortality was recorded in the neighbouring district of Kohat (2·45). These districts are followed by Peshawar (1·81) and Ludhiana (1·23). The lowest mortality, ·004 per 1,000, occurred in the Jhang and Gujranwala districts, in which two and three deaths occurred respectively. The reported small-pox death-rates in Gujrat (·01), Kangra and Dehra Ghazi Khan (·03), Gurdaspur and Sialkot (·04), were also very small.

In the Central Provinces, in 1892, small-pox was more prevalent than in 1891, but excluding that year it was less so than in any of the previous eight years. The total number of deaths registered from this cause was 995, giving a death-rate of ·10 per 1,000. It is worthy of note that in three districts, Murwara, Jubbulpore, and Burhanpur, no death from small-pox was registered, while in Nimar there was only one death. In five districts only was the mortality severe, viz., Bilaspur, Saugor, Raipur, Chanda, and Sambalpur.

There were 68 deaths from small-pox registered in Berar, the death-rate from this disease being ·02 per 1,000 against ·2, the mean of the previous five years. Deaths occurred in all districts except Ellichpur. The death-rate was equally divided between the sexes, and all the deaths occurred among children under 12, 51·5 per cent. of the fatal cases being infants under one year.

The total number of deaths registered in the Madras Presidency as due to small-pox in 1892 was 43,757; the death-rate per 1,000 of the population was 1·3. The largest number of deaths occurring in any one month was 6,872, in March; the smallest, 1,619, in November. The Sanitary Commissioner points out that, just as the maximum mortality from small-pox usually occurs during the dry months and the minimum during the wet months, so years of deficient rainfall, such as 1890 and 1891, are followed by years of excessive prevalence of small-pox. Of the total mortality, 46·6 per cent. occurred among children under 12 years of age. The increase in the small-pox mortality in 1892, as compared with 1891, was chiefly due to the great prevalence of the disease in the Malabar and Godavari districts. In Malabar the death-rate was 4·4. Here it appears that vaccination is carried on under several disadvantages,—the houses of the people are much scattered and not collected together in towns and villages as in other districts, the females who are said to have a preponderating and unusual influence in this district are much opposed to vaccination, while the highly conservative Moplah population oppose any practice that is new to them. Small-pox deaths were registered in 47 of the 55 municipal towns. Cochin heads the list with a death-rate of 19·9 per 1,000. Vaccination is not compulsory in Cochin, and the people are opposed to it. It is further explained that many of the deaths from small-pox occurred among people from the neighbouring Native States who came to the hospital in Cochin for treatment. The lowest death-rate (·06) was returned from Madras, in which town vaccination is carried on thoroughly and efficiently.

Small-pox was epidemic in Coorg throughout the year, but most severely during the months of January, February, and March. Of the 913 deaths registered as due to small-pox, 549 occurred during these months. The death rate was 5·27 per 1,000 of the population, compared with 2·75 in 1891, and 1·07 the average of the previous five years.

During 1892 there were 2,770 deaths recorded in the Bombay Presidency as due to small-pox, and the death-rate was ·15 per 1,000, against ·08 in the previous year, and ·31, the decennial mean. In the collectorates the highest death ratio, ·67 per 1,000, was registered in the town and island of Bombay; the next highest was ·46, returned from Dharwar. The lowest ratios per 1,000 were reported from Surat, Ahmedabad, Kaira, and Shikarpur. In the Upper Sind Frontier no fatal case occurred. Of the deaths 24·99 per cent. were among infants under one year of age, and 46·71 per cent. among children over one year and under 12 years of age. The disease was present throughout the year; it reached its maximum intensity in March and then began to decline, the smallest number of deaths being registered in November, and the number rising again in December.

In Lower Burma 1,463 deaths were recorded in 1892 as caused by small-pox, the provincial death-rate being ·32 against ·29 in 1891, and ·46 the mean of the previous

five years. The district which suffered most severely was Akyab, where the ratio of deaths from this cause was 1·98 per 1,000, the next highest rates were returned from Pegu, '96, Hanthawaddy, '27, and Shwegyin, '24. No death from small-pox was reported in the districts of Sandoway, Mergui, and Toungoo, and in the districts of Bassein, Prome, Thayetmyo, and Tavoy only 10, 4, 1, and 1 deaths respectively were recorded. Deaths were reported to have occurred in 55 out of 118 circles of registration. Of the total number of those who died 979 were under 12 years of age, and of these 274 were infants.

Everywhere, excepting in the Central Provinces and Berar, fevers were more prevalent than in the preceding year, and in India, as a whole, the total number of deaths recorded in 1892 was 4,621,583 against 3,817,683 in 1891, and 4,105,890 in 1890. It will be seen from the following table that the mortality was extremely heavy during the last quarter, and that the smallest numbers of deaths occurred in June and July:—

Statement showing the Deaths from Fevers registered in the different Provinces, by months, during the year 1892.

PROVINCE.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	TOTAL.		Ratio of Deaths per 1,000 of Population.	
													1892.	1891.	1892.	1891.
Bengal - - -	144,114	146,882	186,144	137,741	128,848	91,983	94,267	136,498	115,047	130,968	161,621	139,303	1,607,716	1,333,395	22·84	18·94
Assam - - -	6,246	6,577	8,836	7,604	8,828	8,845	8,969	8,453	7,785	8,003	6,958	6,688	93,971*	75,965	18·72	15·13
North - Western Provinces and Oudh.	98,075	84,661	113,568	123,941	114,794	88,226	72,576	72,291	92,427	105,730	101,498	97,300	1,168,077	1,033,059	24·90	22·02
Punjab - - -	47,835	37,812	39,149	36,105	39,447	34,416	28,923	29,960	81,824	160,378	112,645	67,396	715,990	412,254	34·83	21·62
Central Provinces -	13,187	13,719	19,041	19,343	15,218	11,361	12,160	14,842	16,689	18,244	18,197	16,016	188,017	190,560	19·79	21·61
Berar - - -	3,093	3,022	5,249	5,417	2,892	1,676	1,911	2,718	3,777	4,841	4,330	3,204	41,661	40,850	14·6	17·5
Lower Burma - -	3,622	2,988	3,223	2,862	2,834	3,149	4,168	4,352	3,980	3,841	4,332	5,116	44,122	35,658	9·84	7·76
Madras Presidency	24,692	20,698	25,125	22,698	21,700	19,822	24,314	25,789	23,957	22,404	24,242	25,186	290,627	247,029	8·3	8·6
Bombay Presidency	57,782	34,985	37,903	29,268	25,628	25,480	32,063	33,441	34,373	39,921	48,529	38,664	438,038	368,913	23·27	19·60
Mysore - - -	3,138	3,165	3,727	3,443	3,316	3,252	3,341	3,133	3,537	3,185	3,358	3,310	39,705	38,307	8·19	7·91
Coorg - - -	221	206	212	208	263	364	394	381	340	323	271	277	3,459	2,703	19·98	15·61
TOTAL - - -	402,005	354,715	442,462	388,721	363,760	238,574	283,036	325,855	383,486	407,429	489,011	402,450	4,621,583	3,817,683	—	—

* Includes 6,734 deaths from "Kala azar."

There were 1,607,716 deaths registered as due to fever in Bengal in 1892, and the death-rate for the year was 22·84 per 1,000 of the population. The death-rate from this cause has been rising steadily; the average of the last ten years was 15·17 per 1,000, of the last five years 16·37; while in 1891 it was 18·94. Allowing an increase of 2 per 1,000 for improved registration this year, the mortality is still 2 per 1,000 in excess of that of 1891, and 4 per 1,000 in excess of the average of the years 1887-91. The mortality in rural circles was 23·01 per 1,000, and ranged from 37·23 in Rajshahye to 13·24 in Singhbhum and 6·63 in Furi. In the towns the average fever death-rate was 18·57, a notable increase compared with last year, when it was 12·55, and it ranged from 49·74 in Chanduria, in the Khulna district, to 7·14 in Darjeeling. As a rule, the highest mortality occurs during the three months after the rains, but in the year under review the mortality was greatest in the first three months of the year. This is explained by the Sanitary Commissioner as due to the lowered vitality of the people owing to the scarcity caused by the prolonged drought, and the more than ordinarily poisonous state of the water-supply from the same cause. The most unhealthy divisions in the province were, in order, Rajshahye, the Presidency, and Bhagulpur. In the first-named the highest death-rates occurred in the districts of Rajshahye and Jalpaiguri districts situated in the Terai with insufficient drainage and a very impure water-supply. The Sanitary Commissioner writes:— "The water-courses, which are the main drainage channels, have changed their direction, and left a chain of swamps in their ancient beds. Exactly the same thing has occurred in the districts of Jessore and Nadia, and to a lesser extent in Murshidabad; and in the first two of these districts the population has declined by 18,687 and 50,548 respectively. Jessore and Nadia are now seamed with the beds of extinct rivers, and the few which maintain a languid vitality during the rains, are in the dry weather a chain of foetid swamps. The evil has also, I am afraid, been intensified by the construction of railways and feeder roads with

"insufficient waterways, and nothing but comprehensive drainage schemes can now restore these districts to their former state of salubrity."

The increase in the mortality from fevers in the Bhagalpur Division, which formerly was noted for its healthiness, is said to be in part due to the increase which has taken place in the population, and consequent deterioration of the public health, and, in 1892, to the scarcity and the bad water-supply owing to the drought, but in part also, the Sanitary Commissioner fears, to obstruction from various causes to the free drainage of the country. Chota Nagpore generally enjoys an immunity from fevers unknown in the Gangetic Delta, but this year in two districts, Hazaribagh and Palamow, the fever death-rates were 26·63 and 29·49 per 1,000 respectively. In Palomow, this is partly accounted for by the occurrence in January, February, and March of a severe epidemic of influenza; but in Hazaribagh, the fevers seem to have been of the ordinary malarial type. Orissa was relatively free from fever, the death-rate from this cause having been 12·70 per 1,000 against 9·91 in 1891 and 8·49 the average of the five years 1887-91.

At the end of the year a scheme was put in practice, which it may be hoped will tend to lessen the suffering from periodic fevers under which the people of Bengal labour. Quinine, enclosed in sealed packets, in doses of five grains, is now for sale in most of the post offices in the province, at the price of one pice a packet. A dose of pure quinine is thus placed within the reach of every person in Bengal who has a pice wherewith to buy it. It is too soon yet to hazard an opinion as to how far the people will ultimately take advantage of the plan, but so far the number of purchasers is considered to be encouraging.

Among the European sailors in the Port of Calcutta, there were 310 cases of "fever" with one death, which resulted from enteric fever. There were five cases of enteric, 96 of malarial, and 209 of simple continued fever, against 8, 106, and 88, respectively, in 1891.

The total number of deaths recorded under this heading in Assam, in 1892 was 93,971, 18,006 in excess of the number recorded in 1891, and 24,273 in excess of the average of the previous quinquennium. The death-rate was 18·72 per 1,000, against 15·13 in the previous year, and 13·88, the average of the years 1886-90. In the Surma Valley the mortality from this cause was 15·01; in the Assam Valley 22·77; and in the Khasi and Jaintia Hills 6·53 per 1,000. Of the districts of the Assam and Surma Valleys, the lowest fever death-rate, 13·38, was returned from Lakhimpur, and the highest, 29·79, from Goalpara. The rural death-rate from fever was 18·74, and the urban 17·40. Among the towns, the death-rates ranged from 54·00 in Nowgong, to 3·80 in Maulvi Bazar in Sylhet, and 1·43 in Jowai, in the Hill District.

The heading "Fevers" includes *Kala azar*, and the following table shows the number of fatal cases of this disease recorded in the various districts in 1892 compared with 1891:—

	Number of Deaths from <i>Kala azar</i> .	
	1892.	1891.
Cachar	2	—
Darrang	1,187	232
Nowgong	865	77
Lakhimpur	1	—
Kamrup	3,879	8,682
Khasi and Jaintia Hills	8	1
Goalpara	792	945
TOTAL	6,734	9,937

These figures, as setting forth accurately the mortality from *Kala azar*, must be taken for what they may be worth, seeing that the diagnosis is made in the majority of the cases by unprofessional persons, but the increase in the numbers of fatal cases in Darrang and Nowgong is noteworthy, and the decrease in Kamrup remarkable. In Cachar and Lakhimpur cases were registered for the first time. A valuable and interesting appendix to the Sanitary Report, made up of contributions by Civil Surgeons and Medical Officers of the tea gardens in the province, deals with the relation of the *anchylostomum duodenale* to anæmia, and of *anchylostomiasis* to *Kala azar*.

The most important contribution is that by Surgeon-Major E. Dobson, M.B., Civil Surgeon of Dhubri. It is impossible here to do more than summarise the account of his laborious enquiries, which deal mainly with the effects produced on the health of the host by the presence in the intestines of the *anchylostomum*. Dr. Dobson selected 605 "of the healthiest-looking of the coolies" who arrived at Dhubri with the intention of executing labour contracts in Assam, and set himself to ascertain how many of them harboured the parasite. In the cases of 58, observations could not be concluded, and it is fair to exclude them. Of the remaining 547, in 454 or 83 per cent. *anchylostoma* were present, in 88 instances associated with other parasites. In 23 cases more than 50 worms were obtained and in one case 230. In 366 cases less than 20 worms were obtained and in only seven cases 100 or more.

Thirty-three coolies, who were rejected at Dhubri on account of anæmia, were examined: of these 26 or 78·78 per cent. had *anchylostoma*, in two cases over 50 worms were obtained. Forty-two coolies were rejected because of enlargement of the spleen, 31 or 75·61 per cent. had *anchylostoma*, in one case over 50 worms were present. Twenty-one coolies were rejected for other causes; *anchylostoma* were present in 18 cases, or 85·71 per cent.

During his researches, Dr. Dobson found the parasite in persons newly arrived from Bengal, Behar, Orissa, Chota Nagpore, the Central Provinces, the North-Western Provinces, the Panjab, Madras, and Nepal. Both sexes at all ages, Hindu and Muhammadan alike, harboured the parasite without apparent ill effect. Regarding the relationship of the *anchylostomum* to *kala azar*, Dr. Dobson remarks that "in cases of that disease it is often not found." On this aspect of the question the following extracts from the report by Surgeon-Major Macnamara, M.B., Civil Surgeon of Gauhati, in Kamrup, are very pertinent:—

"I can see nothing in common between these diseases unless the symptoms of anæmia and its consequences In this district we have two diseases to deal with, *viz.*, the anæmic dropsy of coolies, and the *kala azar* which I believe to be distinct, because the anæmic dropsy of coolies has been always with us and no suspicion of propagation from person to person has ever been raised until a conclusion, I believe, not fully warranted by facts was come to, and it was put in the same category with a disease which came as an epidemic, and which is now, so far as I can ascertain, dying out. The disappearance of *kala azar* from the places where it was prevalent without any corresponding synchronous sanitary improvements, seems to me to weigh strongly against a parasitic origin, more specially when the entozoon concerned is supposed to develop with ease and rapidity. All that is now certain, is that we have had a disease of the most fatal kind, which has *alike* attacked villagers and garden coolies, and which has certainly subsided of late. Since my arrival here I have satisfied myself of two facts—first, that many men enjoy good health with large quantities of the *anchylostoma*, second, that many men die of *kala azar* who have given no parasites after treatment with thymol or on *post-mortem* examination."

From the reports furnished by a number of the Medical Officers of the tea-gardens, it appears that the chain of symptoms described as *anchylostomiasis* does not usually develop until some months after arrival in Assam.

The following conclusions seem to be justified:—

- (1.) The presence of the *anchylostomum* in the intestines does not necessarily give rise to serious symptoms, unless other circumstances favour this result.
- (2.) The presence of the *anchylostomum* in the intestines may be a serious complication, but it is not the cause, of *kala azar*.

The so-called Beri-Beri of Ceylon and Assam has no connection with the disease known by this name, the signs and symptoms of which are chiefly due to the effects of peripheral neuritis, which occurs in the Dutch East Indies, Hong Kong, the Straits, and occasionally in Burma; it is probable that this disease rarely, if ever, occurs in Assam.

The number of deaths recorded under fevers in the North-Western Provinces and Oudh in 1892 was 1,168,077, and the death-rate was 24·90 per 1,000 against 1,033,059 deaths and a death-rate of 22·02 in 1891. The deaths from fevers were in excess in the first half of the year, the highest monthly mortality, 123,941, being recorded in April. October, in which month most fever deaths are generally registered, came next with 105,730. The highest death-rate, 41·22, was returned from the Naini Tal district, which includes the Tarai and Bhabar, the next highest rate was in the Saharanpur district, 36·34, and ratios over 30 per 1,000 were returned from the Meerut, Muzaffarnagar Bulandshahr, Bahraich, and Kheri districts. The death-rates recorded in the larger municipalities ranged from 34·88 in Saharanpur to 7·05 in Gorakhpur. Among the

minor municipalities, Manglaur returned a death-rate of 49·43, while in Bulandshahr, Sikandrabad Sardhana, and Hapur, the rate was over 40 per 1,000.

The average fever death-rate in the Punjab in the previous five years was 23·27; in 1892 the rate was 34·83 per 1,000, no less a number than 715,890 deaths having been registered under this heading. In the Gurgaon district the death-rate was below the average of the previous five years, and in Rohtak, Delhi, Karnal, and Simla, the excess above the average was moderate, but with these exceptions the death-rates in all districts were greatly above the average. The Gurdaspur district suffered most severely (49·53 per 1,000), the neighbouring district of Sialkot comes next (44·70), then follow Bannu, Mooltan, Dera Ismail Khan, and Muzaffargarh. The death-rate, especially in the North-Western districts, was raised in the early months of the year by the occurrence of a widespread epidemic of influenza, the deaths from which were recorded as fever. During the cold weather months typhus fever is said to have prevailed in the frontier districts, especially in Peshawar and Rawal Pindi. The vast majority of deaths, however, were caused by fevers of malarial origin, and occurred in the months of September, October, November, and December. The Sanitary Commissioner attributes much of the prevalence of malarial fevers in many districts to excessive rainfall during the third quarter of the year. In the flat Punjab plains heavy rain soon causes floods, and when this is succeeded by a high temperature, fever follows. The comparative scarcity of food in many districts doubtless rendered the members of the poorer classes easy victims to the effects of the malaria.

The number of deaths registered in the Central Provinces as due to fevers during the year was 188,017, against 190,550 in 1891. Compared with that year, there was an increase in the mortality in seven districts, and a decrease in 13. The provincial death-rate was 19·79 per 1,000 of the population against 20·05 last year, calculated on the census of 1891, and 20·40 the mean of the previous five years.

In Berar, under the heading "fevers," there were 41,661 deaths registered in 1892, the provincial death-rate from this cause being 14·6, that is, 1·0 1,000 lower than the average of the previous five years. The highest district rate was returned from Wun, 18·0, and the lowest, 12·0, from Basim.

The number of deaths registered under this heading in Madras was 280,627, a higher mortality than in any year since 1879. Although the death-rate was doubtless rendered higher in several parts of the Presidency owing to the prevalence in them of influenza, still the principal cause of the increased mortality was malarial fever, said to have been due to the heavy rainfall; the public health had been depressed on account of the scarcity that prevailed, and the people were less able than usual to withstand the ill effects of their insanitary surroundings. The death-rate for the Presidency was 8·3 per 1,000 against 7·3 in 1891. The highest district death-rate (22·8) was, as is usual, recorded in Kurnool, while the rate was lowest (2·2) in Tanjore. In the Municipal towns the death-rate was 7·0 per 1,000. The highest rate was 31·4 in Kurnool; the lowest 1·5 in Dindigul.

The total number of deaths from fevers in Coorg was 3,459, and the death-rate was 19·98 per 1,000 of population. The mean ratio of the previous five years was 17·24.

In the Bombay Presidency during 1892, 438,038 persons are reported to have died from fever, and the ratio of deaths per 1,000 of the population was 23·27, against 19·60 in 1891, and 18·32 the mean ratio of the 10 years 1882 to 1891. Of the registration districts the rates were highest in Gujarat and Sind, 34·89 and 27·63 per 1,000 respectively, and lowest in the Southern, 18·24. In 11 collectorates the death-rate was higher than the provincial mean, the list being headed by Ahmedabad, where 41·41 deaths per 1,000 of the population were registered. Exceedingly high death-rates were also recorded in Broach, 35·06, Shikarpur, 34·49, Kaira, 33·76, and Surat, 31·22 per 1,000.

The number of deaths registered as due to fever, in Lower Burma, in 1892 was 44,422, which is the largest number on record. The death-rate for the province under this heading was 9·84, against 7·76 in 1891, and 8·71 the mean of the previous five years. Deaths from fevers were returned from all the registration circles except one. The highest rates of mortality were returned from the three districts of the Arakan division, Akyab (19·47), Sandoway (15·16), and Kyaukpyu (14·64). The lowest death-rates were recorded in the districts of Thongwa (4·44) and Pegu (4·61). Among the towns the highest rate, 23·79, was registered in Pegu; the lowest, 1·33, in Zalun, in the Henzada district. The mean death-rate in urban areas was 8·58, and in rural areas 10·02.

In India as a whole, the total number of deaths returned under "dysentery and diarrhoea" was 234,370, or 9,086 less than in the preceding year. This decrease, however, was confined to the North-Western Provinces and Oudh, the Central Provinces, Berar, Madras, and Bombay. In all the other provinces the mortality was greater than in 1891.

Dysentery
and
diarrhoea.

Statement showing the deaths from Dysentery and Diarrhoea registered in the different Provinces, by months, during the year 1892.

PROVINCE.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Total.		Ratios of Deaths per 1,000 of Population.	
													1892.	1891.	1892.	1891.
Bengal	4,261	3,973	4,096	3,807	4,450	3,827	4,341	5,540	3,732	3,476	3,629	3,359	48,491	43,183	0·68	0·61
Assam	1,022	884	892	914	1,362	1,369	1,523	1,602	1,644	1,583	1,575	1,315	15,685	14,418	3·12	2·87
North-Western Provinces and Oudh.	3,499	2,444	2,768	3,400	4,349	3,693	3,580	3,664	4,141	3,994	3,639	3,277	42,448	40,586	0·90	1·06
Punjab	780	483	480	839	1,238	1,019	883	1,196	2,906	5,202	4,081	2,674	21,781	12,152	1·06	0·59
Central Provinces	932	864	1,425	1,435	1,410	1,139	1,513	2,059	1,848	1,408	1,098	895	16,021	20,889	1·69	2·37
Berar	870	767	981	866	586	406	847	1,229	1,532	1,266	1,057	703	11,200	22,007	3·9	7·7
Lower Burma	255	203	240	310	415	592	893	751	631	477	371	311	5,449	4,162	1·21	0·91
Madras Presidency	4,481	2,511	2,237	1,830	2,430	2,368	3,434	3,773	3,044	2,346	1,920	1,919	32,293	34,223	1·0	1·2
Bombay	2,502	2,127	2,234	2,435	2,783	3,019	4,026	4,041	3,495	3,061	2,952	2,781	35,406	37,728	1·88	2·00
Mysore	433	411	362	337	387	423	516	513	511	482	500	432	5,307	4,936	1·10	1·02
Coorg	15	11	12	15	22	52	30	46	30	21	18	17	289	172	1·67	0·99
TOTAL	19,050	14,678	15,727	16,188	19,432	17,997	21,586	24,414	23,514	23,316	20,835	17,633	234,370	243,456	—	—

In Bengal the registered number of deaths under this heading was 48,491, against 43,183 in 1891, and an average of 49,053 in the five years 1887–1891. These figures bear ratios per 1,000 of the population of ·68, ·61, and ·69 respectively. In urban circles the death-rate was 2·87, in rural circles ·59. The largest number of deaths occurred in August (5,540), the next largest in May (4,450), and January (4,261); the fewest deaths were recorded in December (3,359). As usual, Darjeeling has the highest death-rate (5·57), followed by Balasore and Howrah.

In Assam, under this heading, 15,685 deaths were registered, and the ratio of mortality was 3·12 per 1,000, against 2·87 in 1891, and 2·97, the mean death-rate of the quinquennium 1886–90. The highest rates were returned from the districts of Lakhimpur, 6·65, Cachar, 4·76, Darrang, 4·29, Sibsagar, 3·97, and Sylhet 3·31; the lowest from Goalpara ·48, and Kamrup 1·03.

There were 42,448 deaths from dysentery and diarrhoea in the North-Western Provinces and Oudh, against 40,586 in the previous year, showing a fall in the death-rate from 1·06 to ·90 per 1,000. The highest mortality was, as usual, recorded in the hill tracts, where the high rates, 7·62 and 6·02, were returned from the districts of Garhwal and Almora respectively. The Dehra Dun district shows the next highest rate, 3·85, and in Jhansi, Gorakhpur and Jalaun rates of 2·74, 2·71, and 2·44 respectively were noted. The average ratio in towns was 2·23. From Kashipur (10·26), Budaun (9·95), Hathras (9·70), Kalpi (7·55), and Koil (7·22), the highest rates were returned; in five towns only one death under this heading was returned, and in three, namely, Sahtawar, Laharpur, and Mallawan, none at all.

In the Punjab, under this heading, there were 21,781 deaths registered during the year, the death-rate being 1·06 per 1,000 against 12,152 deaths, and a rate of ·59 in 1891. The death-rate among males was decidedly higher than among females, the rates being 1·12 for males and only ·99 for females; this circumstance is mentioned by the Sanitary Commissioner as having occurred in former years. The districts of Gurdaspur and Sialkot show the highest fever mortality, and from them also are returned the highest death-rates from dysentery and diarrhoea, 2·45 and 2·27 respectively. The next highest rates are those registered in the Gurgaon, Multan, and Amritsar districts, where also the mortality from fevers was high. The lowest rates were registered in the Peshawar, Gujranwala, and Hazara districts, ·24, ·31, and ·32, respectively. It must be noted, however, that in the Peshawar and Hazara districts registration is very imperfectly carried out.

The total deaths registered in the Central Provinces from dysentery and diarrhoea were 16,021, or 4,868 less than in 1891. The death-rate was 1·69, compared with

2.20 in 1891, and 2.42 the mean of the previous five years. There was a decrease in the death-rates in almost all districts, but in a few the rates are rather high, and in Bilaspur and Sambalpur they were much higher than in 1891.

In Berar the deaths registered as due to dysentery and diarrhoea numbered 11,200, compared with 22,007 in 1891. The death-rate per 1,000 was 3.9 against 7.7 last year, and 5.9 the mean of the previous five years. The highest district death-rate, 7.8, was recorded in Ellichpur, the lowest, 1.1, in Wun.

In Madras there were 32,293 deaths recorded under this heading, 1,930 less than in 1891, and the death-rate was 1.0 per 1,000. By far the highest mortality from these diseases was recorded in Madras, 8.9 per 1,000, next comes Chingleput, with a ratio of 3.2. These two districts usually furnish the largest number of deaths. The lowest rates were returned from Ganjam (.4), Salem (.4) and Anantapur (.3). The largest number of deaths occurred in January, the smallest number in April. In the municipal towns the average death-rate was 3.4, while the district rate for the presidency was only .8 per 1,000. Bimlipatam has the highest death-rate, 10.7, and next comes Tanjore with a death-rate of 8.3. The lowest rate was registered in Dindigul and Vaniyambadi; in both these towns the mortality was .3 per 1,000.

The total number of deaths which occurred under the heading dysentery and diarrhoea in Coorg was 289, the death-rate was 1.67 per 1,000 against 1.47, the mean ratio of the previous five years. As usual the largest number of deaths occurred during the monsoon months.

During 1892, in Bombay, 35,406 deaths were attributed to dysentery and diarrhoea, and the ratio of deaths was 1.88 against 2.00 per 1,000 in the previous year. These diseases were especially prevalent in the Southern and Western registration districts, which returned death-rates, respectively, of 4.37 and 2.56 per 1,000. In the Collectorate the highest mortality occurred in Belgaum (5.95) and Dharwar (4.97), and the lowest in Hyderabad (.06) and Thar and Parkar (.06). The maximum mortality occurred in August, the minimum in February.

Under this head 5,449 deaths were registered in Lower Burma, and the death-rate was 1.21 per 1,000, against .91 last year, and 1.01 the mean of the previous five years. The districts of the Arakan division show the highest ratios of mortality, Sandoway, 3.10, Kyaukpyu, 2.77, and Akyab, 2.42. The lowest rate, .30, was returned from Henzada. Of the towns, Bassein (7.16), Myanaung (4.74), Toungoo (4.37) and Akyab (3.37), had the highest death-rates.

Injuries.

The total number of deaths recorded under the heading "injuries" for the whole of India in 1892 was 85,950, against 88,933 in 1891, and 87,264 in 1890. But, notwithstanding this decrease, the mortality, as compared with 1891, was greater in Assam, the Punjab, Berar, Lower Burma, Madras, Mysore, and Coorg. The diminution in the total number referred to above was almost evenly distributed under the several sub-heads embraced by "Injuries."

All other causes.

The number of deaths from "all other causes," which rose from 1,086,586 in 1890 to 1,109,512 in 1891, was no less than 1,210,268 in 1892; and all the provinces contributed to this increase excepting the Central Provinces, Berar and Madras.

Vaccination.

The total number of successful vaccine operations performed in 1892-93 was 6,239,659 against 5,712,508 in 1891-92, and 5,812,829 in 1890-91. This increase was very generally distributed; only from the Central Provinces was a diminution in the number of successful cases reported. The highest average number of vaccinations performed by each vaccinator was 3,316 in Berar, and the lowest 632 in Bengal. The percentage of success in primary cases, returned from Burma, was exceptionally low, viz., 86.65 in Lower Burma, and 86.09 in Upper Burma. In the other provinces it was nowhere less than 92.43. The highest ratio of success in any province was 99.45 in Bengal. In the case of re-vaccinations, the percentage of success ranged between 24.8 in Berar, and 84.27 in the Central Provinces. The lowest proportion of persons successfully vaccinated per 1,000 of population was recorded in Upper Burma, 19.29, and the highest, 63.80, in Coorg; the next highest figures being 37 in Berar, 34.25 in the Central Provinces, and 33.25 in the Punjab. In both the Punjab and Berar, where there was an undue increase in the number of re-vaccinations, the number of infants protected was less than in 1891-92, but estimating the births at 40 per 1,000 of population, the ratio of successful operations among infants would appear to be respectively 50.5 and 66.4, a result which, compared with results in other provinces, cannot be

considered unsatisfactory. In addition to the operations carried on by the special establishment, 156,823 successful vaccinations were performed by the dispensary staff, against 170,175 in 1891-92. This falling off was mainly due to the dispensary establishment being relieved of the vaccination work in Berar, and to the selection of dispensaries as vaccination centres in Burma, so that the cases in such dispensaries are not performed by the dispensary staff.

The vaccination establishment of the Province of Bengal was re-organized in 1892-93. Under the new system every Civil Surgeon is held responsible for the protection of his district from small-pox. He uses his own discretion as to the number of vaccinators it is necessary to employ, and is allowed the assistance of an Inspector and a Sub-inspector to supervise the work of the vaccinators. According to this new scheme the total number of inspecting officers was 259, and of vaccinators 3,045. They performed in all 1,836,411 operations, of which 1,812,259 were successful; in 1891-92 the corresponding figures were 1,641,088 and 1,614,501. The average number operated on by each vaccinator in 1892-93 was 603 against 599 in 1891-92. The death-rate from small-pox in 1892 (0·31) was greater than in any of the preceding 10 years; and the proportion of persons successfully vaccinated (24·52 per 1,000) though somewhat greater than the ratio of 1891 (22·63) was less than in any of the 12 years, 1879-90.

The total number of operations in Assam in 1892-93, including those performed by the dispensary officials, was 214,402 against 197,147 in 1891-92. Of these the operations carried on by the paid and licensed vaccinators and also some native inspectors numbered 200,241, out of which 190,117 were primary cases, and 10,124 were re-vaccinations, the percentages of success being respectively 94·53 and 83·17. Of the dispensary operations, 13,438 were primary cases, successes 81·75 per cent., and 723 were re-vaccinations, of which 86·30 out of each 100 proved successful. In addition to these, 10,541 operations were performed in the tea gardens by garden agency. All of these were primary vaccinations, and the ratio of success in them was at the rate of 79·48 per cent. The average number of vaccinators employed rose from 205 in 1891-92 to 216 in 1892-93; and the percentage of successful primary operations among infants under one year of age to the total number of births stood at 26·89 as compared with 15·50 in 1891-92, and 11·69 in 1890-91. The mortality from small-pox (0·29) was less than in the preceding four years, and the proportion of people protected by vaccination (31·51) was greater than in any year since 1877. The compulsory vaccination Act was in force in nine municipalities and one cantonment, but its provisions are not apparently enforced with strictness: for instance, while at Dhubri with a population of 4,825 persons, the number of vaccinations was 248, in Goalpara, with a population of 5,440 persons no more than 83 persons were operated on by the vaccinators.

The bovine vaccine depôt at Shillong is reported to have worked well, but the evidence as to the comparative efficacy of the "glycerine" or the "lanoline" preserved lymph is somewhat conflicting. Reports from the local Sanitary Commissioner stated that the lymph preserved in glycerine was "much better" than that preserved in lanoline; whereas during the course of a recent tour of inspection in Assam made by the Sanitary Commissioner with the Government of India, he ascertained that while the "glycerine" lymph got from Shillong failed and led to delay in establishing vaccination, the "lanoline" lymph from Darjeeling was very successful.

The number of vaccinators employed in the North-Western Provinces and Oudh rose from 770 in 1891-92, to 824 in 1892-93, and the total number of operations from 1,059,981 to 1,112,117. There was also a slight increase in the percentage of successful cases, which rose from 91·66 to 92·43 in primary vaccinations, and from 54·73 to 56·50 in re-vaccinations. The proportion of persons protected by vaccination in the province, 20·34 per 1,000, though somewhat greater than the ratio for the preceding year, 19·10, is still low as compared with most other provinces. The number of successful primary operations among children under one year of age increased from 378,512 in 1891-92, to 424,016 in 1892-93, and among those under six years of age from 432,777 to 452,993. The death-rate from small-pox (0·16) has not been so low as in the year under review since 1877, and the proportion of persons protected by vaccination (20·34) in 1892-93 is the highest on record. Vaccination with calf lymph was practised to a certain extent in the 2nd and 3rd circles, but the Sanitary Commissioner remarks "there is reason to believe that the extension of the use of preserved lymph as opposed to fresh lymph derived in the arm-to-arm system, would lessen the amount of protection against small-pox which is at present afforded by vaccination."

In noticing the statistics of the Punjab for 1891-92 it was remarked that in consequence of an order forbidding the practice of unnecessary and repeated re-vaccinations at short intervals there was a marked decrease in the total number of such operations during that year; in 1892-93, however, the number rose to 251,108, or 61,015 more than in the preceding year. But on the other hand, the total number of primary operations, 564,975, was not only less than the figures for 1891-92, when it was 611,576, but also less than the total for 1890-91, viz., 588,416. This is stated to have been chiefly due to the unhealthiness of the year, and also partly to the failure of the lymph supply and the carelessness of some of the vaccinators. There has been a steady increase in the use of animal lymph by the Vaccination Department of this Province. In 1892-93 93 per cent. of the total operations were performed with this lymph against 86 in 1891-92 and 68 in 1890-91. The mortality from small-pox was 0·54, and the ratio of successful vaccinations per 1,000 of population 33·25.

As compared with 1891-92, the Provincial Vaccination Staff of the Central Provinces was less by one man, and the total number of operations fell from 445,720 to 435,410, but the ratio of success in primary cases rose from 96·40 to 96·68, and in re-vaccinations from 79·57 to 84·27. The decrease in the number vaccinated is said to have been partly due to the introduction of the new system of animal vaccination and partly to remissness on the part of some of the vaccinators. It is however, satisfactory to observe that of children under one year of age, 248,315 were successfully vaccinated in 1892-93 against 239,951 in 1891-92. On the whole, the proportion of persons successfully vaccinated per 1,000 of population fell from 38·25 to 34·25, but with regard to this it should be remembered that the ratio of 1891-92 was calculated on the census figures of 1881, which are much less than those of 1891. In addition to the numbers vaccinated by the vaccination staff, 18,436 operations were performed by the dispensary establishments against 17,526 in 1891-92; and the percentages of success in these were 92·09 in primary cases and 70·67 in re-vaccinations against 91·86 and 63·03, respectively, in the previous year. Considerable progress was made in the introduction of animal vaccination in the Province. Although the small-pox mortality in 1892 (0·10) was slightly greater than in 1891 (0·08), yet it was much less than in any of the 14 years preceding 1891.

The vaccination establishment of the Province of Berar was strengthened by the addition of two vaccinators during the year under report, and the proportion of persons protected rose from 36·0 in 1891-92 to 37·0 in 1892-93. The total number of operations was 145,882 or 17,026 more than in the preceding year, but this excess was to a large extent due to increase in the number of re-vaccinations during the year. The important events of the year were the transfer of the work of vaccination from the dispensary establishment to the provincial special vaccination establishment, and the introduction of vaccination into Melghat. The mortality from small-pox (0·02) was somewhat greater than in the preceding year, but it was less as compared with that of any year since 1885.

The total number of operations performed by the special establishment of Coorg was 11,851 against 10,430 in 1891-92, and the average number performed by each vaccinator was 1,317 against 1,159 in the previous year. The percentage of success in primary cases was at the rate of 94·25 and in re-vaccinations at 81·35 against 93·15 and 89·38 respectively in 1891-92.

Although the number of vaccinators in Lower Burma was less by one than in the preceding year, the total number of operations rose from 129,509 to 156,116, and the average number vaccinated by each vaccinator from 1,962 to 2,402. The percentage of success in primary cases was 86·65 and in re-vaccinations 47·79 against 85·21 and 57·19 respectively in the preceding year. Although the mortality from small-pox (0·32) was greater than in 1891 (0·29), yet with the exception of 1889, the proportion of those protected from that disease (25·79) was greater during the year under report than in any other year since 1877. There has been a steady falling off in the number of dispensary vaccinations in the past two years, but this is said to be due to the selection of dispensaries as vaccination centres according to the rules framed under the Vaccination Act, and the consequent entry of their vaccination operations in the general returns. In 1892-93 the number of these operations amounted to only 830, with 81·36 per cent. of success in primary cases and 50 per cent in re-vaccinations.

The total number of operations performed in Upper Burma during the year was 77,991 or 20,006 more than in 1891-92, and 40,035 more than in 1890-91. This increase was widely distributed: out of the 21 districts in the province in only four were the operations fewer in number than in the preceding year. The percentage of

success in primary cases was 86·09, and in re-vaccinations 73·61 against 85·74 and 70·76 respectively in 1891-92. In addition to the above 2,164 operations were performed by the dispensary officials; in these the ratio of success in primary cases was 81·72, and in re-vaccinations 86·30. The ratio of persons successfully vaccinated per 1,000 of population was 19·29 against 14·37 in the previous year.

Notwithstanding the addition of three Superintendents, one Inspector, three Assistant Superintendents, and 17 Vaccinators to the Vaccination Establishment of Bombay Presidency, the total number of operations performed during 1892-93 fell to 986,758 from 998,065 in 1891-92. This falling off is said to have been mainly due to the prevalence of fever and cholera and to scarcity. The percentage of success in primary cases was 94·64 against 94·95 in 1891-92, and in re-vaccination 58·80 against 62·14. The ratio of persons successfully vaccinated per 1,000 of population also fell from 31·78 in the preceding year to 30·71 in the year under report. These results are hardly satisfactory, especially when the number of small-pox deaths in 1892 amounted to 2,770 or 0·15 per 1,000 against 1,491 or 0·08 in 1891.

There was an accession of nine Vaccinators and one second class Deputy Inspector to the vaccination staff of the Presidency of Madras, and the total number of operations, including those performed by dispensary officials, increased by 111,121. The proportion of success in primary cases was 95·2 per cent. against 93·6 in 1891-92, and in re-vaccinations 78·5 against 76·2. The ratio of persons successfully vaccinated per 1,000 of population was 28·7. The returns of previous years show that there has been a fairly steady increase in the proportion of the people protected by vaccination. The results of the working of the department appear, however, to admit of great improvement, especially in the districts of Tanjore, Godavari, Ganjam, Anantapur, and Vizagapatam. It is reported that the use of glycerine paste proved more successful than any other kind of preserved animal lymph, but it was inferior to lymph taken direct from the calf.

Sanitary Works—Military.

The total outlay on Military Works executed during 1892-93 amounted to Rs. 90,88,203, or 7,43,949 less than in the preceding year. The details of the various works on which the above amount was spent are not yet available.

Civil Sanitary Works.

In 1892 the income of the 145 municipalities of Bengal, added to the balance from 1891, amounted to Rs. 34,51,618, and of this sum 5·04 per cent. was spent on original sanitary works, and 37·79 per cent. on sanitary works of an annually recurring nature. On three heads of expenditure—Conservancy, Drainage, and Water-supply—Rs. 10,08,058 were spent against Rs. 9,07,220 in 1891. The increase on account of Conservancy was Rs. 58,356, on account of Drainage Rs. 3,868, and on Water-supply Rs. 38,614. Many improvements in the interests of the public health were made in the province during the year at the expense of public funds and of private liberality. The most important work was the construction of waterworks at Nasirabad by Raja Surya Kanto Acharji, Bahadur, at a cost of Rs. 1,42,764. In all municipalities night-soil is now trenched, but the system is not yet completely carried out, as in most municipalities sufficient attention is not given to the cropping of the land. The following were among the more important matters considered by the Sanitary Board during the year; it is satisfactory to note that in some cases work is being carried on:—

- (1.) Drainage of Dinajpur.
- (2.) Preparation of internal drainage scheme for Jamalpur.
- (3.) Improvement to the water-supply of, and a drainage scheme for, Pubna.

An attempt was made to induce the municipality of Monghyr to combine with the East Indian Railway Company, in their action to secure water for their locomotive shops at Jamalpur, and so obtain a supply of filtered water at Monghyr. It is feared that the municipality are not disposed to incur the expense.

The total income of the 20 municipalities of Assam in 1892 was Rs. 1,89,956, against Rs. 1,73,340 in 1891, and of this 60·31 per cent. was expended on sanitary and other works, including roads and bridges, against 54·74 of the total so spent last year. About one-seventh was expended on water-supply and a little over one-fourth on conservancy. No work of special importance was carried out during the year, but attention was given to the improvement of conservancy in the municipalities and the increase and improvement of water-supply.

The Sanitary Board seems to have considered the improvement of the water-supply of villages and particularly village conservancy.

In the North-Western Provinces and Oudh the following are the more important sanitary improvements begun or completed during the year:—

- (1.) The completion of the Benares Waterworks, which were opened on the 18th of November by the Lieutenant-Governor.
- (2.) The water-supply projects of Cawnpore and Lucknow were sanctioned; considerable progress was made in the works at Cawnpore, and in Lucknow work was begun.
- (3.) Minor waterworks were completed at Haldwani and Naini Tal, and schemes for improved water-supplies for Mussoorie, Rajpur, Dehra, and elsewhere were in progress or proposed.
- (4.) A scheme to supply the City and Cantonment of Meerut with good potable water was proposed, and reports were called for towards the end of the year.
- (5.) At Benares sanction to proceed with an extensive drainage and sewerage project was accorded.
- (6.) At Naini Tal the drainage and sewerage scheme was nearly completed.
- (7.) The Kali Barhganga drainage scheme was completed.

The question of the reconstitution of the Sanitary Board was before the Local Government during the year, but final orders on the subject have not yet issued. For some time past the Board has had under consideration the more urgent projects for the relief of obstructed drainage in certain tracts, and the question of carrying into effect the North-Western Provinces and Oudh Village Sanitation Act (Act II. of 1892) has been referred to them for consideration.

“An Act for the licensing, inspection, and regulation of Lodging-houses in Municipalities in the North-Western Provinces and Oudh” (Act I. of 1892) was passed and became law on the 19th of January 1893.

A committee was appointed by Government to advise on the remedies to be employed to prevent the pollution of the sacred pool at Hardwar, to report on the practicability of providing Hardwar with a supply of pure drinking water, to formulate regulations for the prevention of overcrowding, and to make suggestions for the health, comfort, and convenience of pilgrims at future fairs.

The income of the municipal towns of the Punjab, in 1892, amounted to Rs. 44,46,572, and the expenditure on sanitary works was Rs. 14,72,431, or Rs. 2,67,662 more than last year. The expenditure on water-supply, including the cleaning of tanks, was Rs. 5,86,041, as compared with Rs. 3,41,618 in 1891, and the amount spent on drainage and sewerage was Rs. 1,29,853 against Rs. 1,17,479. The sum realised by the sale of manure and town sweepings continues to increase, and in the year under report was Rs. 1,28,804. The waterworks at Delhi were completed and were formally opened by the Lieutenant-Governor in November. A part of the Delhi drainage scheme has been sanctioned, and a loan promised by Government to carry out the project. At Simla rapid progress was being made with the schemes for the extension of the waterworks and improvements in the sewerage. The Abbottabad waterworks were completed. Rapid progress was made in the water-supply works of the town and cantonment of Kohat. The Murree water-supply project was in progress, while schemes for the supply of water to the cities of Umballa, Amritsar, and Mooltan, were under consideration. Projects for the drainage of Anarkalli and Dera Ghazi Khan were submitted to Government for sanction. The intra-mural drainage works at Gujranwala were nearly finished, and at Kohat the drainage scheme was completed. There was great improvement effected in the drainage of Peshawar, while schemes for the drainage of Ferozepore, Rawalpindi, and Muzaffargarh were under consideration. The Sanitary Board met six times during the year. They considered and recommended the adoption of improvements in the rules for the collection of vital statistics, which were approved by Government. They had under consideration projects for the better drainage of the water-logged tracts in the province, besides various sanitary schemes of minor importance. After considering the suggestion in the memorandum of the Army Sanitary Commission on the report of the Sanitary Commissioner of the Punjab for 1890, that the addition of a special engineer to the Sanitary Board would be a very valuable assistance, the Board represented the matter to Government, and recommended that a first-class executive or superintending engineer should be appointed to the Board, and should give his whole time to the initiation and supervision of sanitary works.

The total income of the 19 municipalities of the Central Provinces in 1892 was Rs. 16,66,969, and of this 19·04 per cent., or Rs. 3,17,470, was spent on sanitation, including Rs. 62,753 spent on medical relief. Of the total, 11·43 per cent. was spent on conservancy, 0·23 per cent. on drainage, and 2·47 per cent. on water-supply.

The most important of the sanitary works completed or under consideration were the following:—

(1.) *The Balram Dass Waterworks, Raipur.*—In March 1892 an estimate amounting to Rs. 3,48,691 was sanctioned. Owing to the situation of the town of Raipur a gravitation scheme was found to be impossible. The water is collected in underground galleries on the right bank of the river Karoon from the percolation stream which attends the river. The river bed is the filter, and the water is pumped up through a rising main, $3\frac{1}{2}$ miles in length, to an expense reservoir 134 $\frac{1}{2}$ feet above the pumping station, and at a sufficiently high level to command the town, civil station, and military lines. The works were opened by the Chief Commissioner on the 30th December 1892. The results are excellent.

(2.) *The Rajnandgaon Waterworks.*—An estimate amounting to Rs. 1,89,365 for this scheme, which is on the same lines as the Raipur project, was sanctioned.

(3.) *The Burhanpur Waterworks* were improved, the estimated cost being Rs. 1,41,279.

(4.) *Nagpur water-supply* improved by laying a second main from Ambajheri reservoir to the pumping station, fencing in a portion of the reservoir area, and removing a small village, which was bought up.

(5.) *Harda Waterworks.*—Survey completed.

(6.) *Khandwa Waterworks.*—Survey completed.

(7.) *Drainage surveys* were carried out for the towns of Nagpur, Jubbulpore, Saugor, Bilaspur, and Sambalpur.

The Sanitary Board were chiefly occupied with village sanitation. In many villages the water-supply was improved by the construction of new wells and the renewal of old, and especial attention was given to the provision of pure water for the lower castes. Many villages were properly drained, and the sites of others cleansed under the direction of the Board.

The income of the eight municipalities in Berar, in 1892, was Rs. 2,22,152, of which 61·1 per cent. was expended upon sanitary works. Great attention was paid to conservancy, and night-soil is trenched in all the municipalities. Although cultivation has been begun in most, it is to be feared that some time must elapse before this will be remunerative, as local caste prejudices are strong against the use of night-soil as manure. Considerable sums have been expended on the improvement of the Akola water-supply at Kapsi. The works were in progress during the year, and when completed will give an abundant supply of good, wholesome water. A complete system of drainage for the city of Amraoti was considered, and work will be begun as soon as funds are available. Not including municipalities, the total expenditure on works of sanitary improvements was Rs. 1,48,571, chiefly incurred on village conservancy, the construction and up-keep of wells, &c. The district sanitary boards assembled once in the year at each headquarter station, and were chiefly occupied in projects for the improvement of the sanitary state of villages. Village sanitary boards have not, so far, proved to be very useful.

The total estimated receipts of the towns in Madras in 1892–93 was Rs. 25,51,800. Of this amount Rs. 15,39,485, or 60·3 per cent., was assigned for expenditure on sanitation, and during the first nine months of the year Rs. 7,85,927 were actually spent for this purpose. The works undertaken and carried out during the year consisted in the sinking and repairing of wells, construction and repair of tanks, latrines, drains, dust-bins, &c. No work of especial importance seems to have been carried out. In 10 municipalities the trenching of night-soil and the subsequent cultivation of the land has been introduced, and “is likely to become popular and prove a success.” The affairs of each district were managed by a board, called the district board, consisting of not less than 24 members, presided over by the Collector. Each district board has subordinate to it a number of *Taluq* boards and union *Panchayats*. The total estimated income of the districts in 1892–93 was Rs. 79,04,903, of which 8 per cent. was allotted for sanitary purposes. During the first nine months of the year a little more than half of the allotment was utilised.

In Coorg, in 1892, Rs. 21,078 were spent on sanitary works; a considerable amount of this was spent on road making and other works not directly connected with

sanitation; but a good deal was spent on the construction and repair of wells. Most of the money, however, Rs. 15,208, was expended on the water-works at Merkara, which, it is hoped, when completed, will give the town an excellent and abundant supply. The Sanitary Board met five times during the year.

In Bombay, in 1892, the chief features of the year in the direction of sanitary improvement seem to have been (1) the sewerage at Ahmedabad; sewers have been laid in one section of the town and house connexions were made, the liquid sewage is pumped up to a sewage farm: (2) arrangements to supply the city of Surat with water from wells or galleries sunk near the river at Warucha: (3) experiments to discover a source of pure water for Broach: and (4) the extension of the water-supply, and the preparation of a drainage scheme for Poona, which are still under consideration. The Sanitary Board entered on their duties on the 23rd of January, and the members arranged to travel on inspection duty together. The following are the more important transactions of the Board:—Projects for the water-supply of the following towns were considered, namely, Kalyan, Dakore, Yeola, Nasik, Broach. Surat, Murbad, Shahapur, Barsi, Hubli, and Veramgam. Plans and estimates for the supply of water to the Poona city and cantonment were drawn up by the Sanitary Engineer, and the prospects of supplying Ahmednagar with water were inquired into by that officer. A project for the water-supply of Dharwar was discussed by the Sanitary and Executive Engineers, and the site for a proposed reservoir examined by the Board. Improvements in the water-supply of Kirkee, Sholapur, and Satara were considered by the Board. Reports on the drainage of Sholapur and Pandharpur were made by the Sanitary Engineer; and the advice of the Board concerning the drainage of Dakore, Barsi, Hubli, Nasik and Sirur was given. Plans and estimates for the surface drainage of Belgaum town were approved.

In Burma, in 1892, the total expenditure by the Public Works Department on sanitary works and improvements was, in the Lower Province, Rs. 20,169, including Rs. 8,596 on water-supply, and in the Upper Province Rs. 24,749, including Rs. 15,485 on water-supply. In the absence of sufficient data it is not possible to say what was the total income of the municipalities, nor what proportion was spent on sanitation. Much activity is said to have been displayed throughout the larger towns of the province in the matter of conservancy. In Rangoon the Shone and Ault system of sewerage has been maintained in good working order, and 587 new house connections were made during the year, bringing the total to 1,180. At Rangoon the work of constructing a reservoir in connexion with the Royal Lake was nearly completed. This will not, however, add much to the storage capacity of the lake, and a scheme for extending the Victoria Lake by the erection of bunds, at a cost of about Rs. 1,42,000, was drawn up by the Municipal Engineer. It is calculated that when the extension is completed the area of the lake at the top water level will be 1,010 acres, and the contents 2,820,000,000 gallons of water, and that 25 gallons of water a day per head of population will be available. It was proposed to augment the supply of the lakes by sinking artesian wells, but it appears that this would not suffice to meet the increasing wants of the town. Seven such wells in Rangoon, sunk by private individuals, yield about 100,000 gallons daily. The waterworks at Prome continue to work satisfactorily, and the supply was extended. The water-supply at Akyab was much improved during the year. Artesian borings for water were carried on at Myingyan, Letpadan, and Gyobingauk, but as yet with negative results. Sanction for the sinking of an artesian well at Yamethin was obtained. At Mandalay the water-supply scheme was still under consideration. The number of meetings of the Sanitary Board is not stated in their report, but they seem to have been mainly occupied in considering the surveys of selected towns.

General Remarks.

Quarantine at Camaran.

The Lazaretto at Camaran was opened on the 2nd of February, and the first steamer arrived on the 5th of that month; the last steamer left on the 30th of June. During the Haj season 43 vessels, with 24,015 pilgrims, called at Camaran, against 32 ships with 22,303 pilgrims in 1891. Of the total number of pilgrims 9,719 were natives of India, and 305 were Afghans. There was not a single case of cholera during the season, but there were a few cases of smallpox at Camaran, and some cases of this disease occurred among the pilgrims in the steamers from India. The chief diseases from which the pilgrims suffered were fevers, chest complaints, dysentery and diarrhoea. It is said that there were cases of influenza, but if there were, the

cases were few in number and not severe. The number of deaths was 49 against 76 last year. Water for drinking purposes, although sweet at the beginning of the year, became saltish later on; this was attributed in a measure to the want of rain in May and June. Much inconvenience is suffered by the pilgrims on account of there being no cook-houses. The latrine arrangements are said to be satisfactory. Although the brackish water is believed not to be injurious to health, Her Majesty's Vice-Consul suggests the use in future of condensers which will, he hopes, remove one of the principal causes of complaint on the part of the pilgrims. In April a Committee visited Camaran for the purpose of considering the best means to improve the condition of the lazaretto. They made a number of recommendations, which, if carried out, will remove much of the discomfort endured by the pilgrims during their stay, and will greatly improve the sanitary condition of their surroundings. The Acting Consul at Jeddah points out that while pilgrims from Java are subjected to a quarantine of only five days, Indian pilgrims are invariably detained for ten; he believes that if special arrangements were made for the disinfection of pilgrims and their luggage, and the ships in which they are conveyed, under competent supervision at the principal ports of embarkation in India, that the Board of Health at Constantinople could be induced, through Her Majesty's Ambassador at the Porte, to reduce the term of quarantine for pilgrims from India from ten days to five.

The Haj came to an end without the outbreak of cholera or other epidemic disease.

The work which has been done during the course of the past year in the laboratory attached to the Office of the Sanitary Commissioner has been almost entirely devoted to an attempt finally to settle the vexed question whether any one specific comma-bacillus is associated with cholera in Calcutta. Full details regarding the investigation are included in a paper which is now passing through the press for the forthcoming number of "Scientific Memoirs by Medical Officers in the Army of India," but the following is a summary of the principal results and conclusions which have been arrived at:—

Researches
by the
Special
Assistant.

The evidence which has been gradually accumulated in the laboratory during the course of the past four years appears fully to justify the conclusion that there is no one specific choleraic comma-bacillus. Certain distinct forms of comma-bacilli obtained from cases of cholera have now been in continuous cultivation for nearly four years, and various others for periods ranging from over three years to one year and a half. During the periods in which they have been cultivated they have all been exposed to the influence of precisely like conditions. They have been grown in portions of the same media in the strictest sense, they have been transplanted simultaneously and have been exposed to like conditions of environment during growth, and yet they continue to present well-defined differences. Abundant evidence has been acquired that the majority of them are extremely susceptible to both morphological and physiological modifications under the influence of prolonged exposure to particular environments, and consequently, there are fair grounds for concluding that under the influence of prolonged cultivation under precisely like common conditions any distinctive peculiarities, which were originally present, not as the result of any inherent specific peculiarities, but merely owing to antecedent exposure to unlike conditions, ought to have disappeared. But no tendency to any such general assimilation in the characters of the various forms has manifested itself. Prolonged cultivation under special conditions has certainly in many cases given rise to important modifications of property, but these have not been of a nature to produce any general unification of the various forms; they have not led to the development of any common average form as the result of disappearance of distinctive features. The distinctive features which the various forms now present are not invariably precisely of the same nature as they originally were, which, of course, is only natural in a group of modifiable organisms, but where the original differences have disappeared, equally conspicuous new ones have replaced them. There is thus no scientific ground whatever for the assumption that all the distinct forms of comma-bacilli occurring in connexion with cases of cholera are mere varieties of one species. Taking the facts as they stand, there are no more logical grounds for regarding all the forms of choleraic comma-bacilli as mere varieties, than there are for regarding all schizomycete organisms as such. Any definite relation between the occurrence of cholera and the presence of a particular species of comma-bacillus within the intestinal tract cannot, therefore, be shown to exist, and with this any theory ascribing the choleraic condition to the action of any distinct species of intestinal organism which has yet been

discovered comes to the ground. But, more than this, the induction of the choleraic condition cannot even be ascribed to the action of a group of organisms consisting of the various forms of comma-bacilli which occur within the intestinal tract in cases of the disease, seeing that cases occur in which there is no evidence of the presence of comma-bacilli of any kind whatever.

If the induction of the primary choleraic condition be owing to the action of any organisms growing within the intestinal tract, these have yet to be found. The introduction of large quantities of comma-bacilli into the intestinal tract has never yet been satisfactorily shown to lead to the development of cholera, and comma-bacilli of various kinds frequently abound in the intestinal contents of cases which are unequivocally not of choleraic origin in the ordinary sense of the term. There is thus no evidence to show that any form of comma-bacillus is capable of inducing the choleraic condition if it gain access to the intestinal tract, and there are many facts suggesting that the frequency with which comma-bacilli abound within the intestinal tract in cases of cholera is a consequence, not a cause of the choleraic condition. Even, however, if this be so, even if the prevalence of comma-bacilli within the intestinal tract hold a consequential and not a causal relation to the establishment of the primary choleraic condition, it by no means necessarily follows that they are of no importance. Some forms at all events may be capable of affecting the ultimate course of the disease owing to the nature of the products to which they give rise, and which are liable to enter the system in bulk whenever active intestinal absorption begins to be re-established. The facts as they stand afford no reasonable grounds for supposing that any measures establishing immunity from the toxic effects of the products, which are certainly produced by certain forms of comma-bacilli and other schizomycete organisms, can have any appreciable effect on the prevalence of cholera, but, at the same time, are such as to render it not unlikely that the immunity may be capable of affecting the mortality of the disease.

ABSTRACT OF REPORT OF THE SANITARY COMMISSIONER FOR MADRAS FOR 1892.

(Surgeon Lieutenant-Colonel J. A. Laing.)

General Population.

The first regular census, which was taken on the night of 14th November 1871, returned the population of the Madras Presidency, excluding the Native States of Travancore, Cochin and Pudukóta, as 31,281,177. In the next census, which was taken on the night of the 17th and on the morning of the 18th February 1881, the population had fallen to 30,868,504, showing a decrease of 412,673. In the last enumeration, however, made on the night of 26th February 1891, the figure rose to 35,677,324. The total area of the Presidency being 141,605 square miles, the average population per square mile is 251·9.

The most thickly populated district is Madras, where 15,604 persons live in each square mile. Next to this stands Tanjore followed by Malabar, South Arcot and Chingleput. In all these districts the density varied from 600 to 400 per square mile. The most sparsely inhabited tracts of country are Kurnool and the Nilgris.

The total increase for the Presidency was 4,808,820, yielding a percentage of 15·58 on the previous census. In every district there had been an increase, but it varied considerably from 4·59 in Tanjore to 23·71 in Bellary. In 12 districts the rise in population was great, being more than 15 per cent. In only three districts the increase was below 10 per cent.

The record of births and deaths for 1892 does not extend to the whole population as ascertained at the census of 1891. There are some tracts of zemindari estates, &c., for which no vital statistical returns are received. The total population for which returns were furnished in 1892 was 33,693,179, being 1,943,977 short of the total population, viz., 35,637,156, excluding the European and Eurasian population.

The total births registered during the year 1892 amounted to 845,029 against 924,238 in 1891 showing a decrease of 79,209. Considered with the population they were in the proportion of 25·9 per 1,000 against 27·4 in 1891. As before mentioned these rates have been calculated on the census figures of 1891. The following table shows the births registered during the past 21 years :—

Table showing the Births for a series of years and their ratios per 1,000 of population.

Years.	Population for which returns were received.	Births.	Birth-ratio per 1,000.	Deaths.	Death-ratio per 1,000.
1872	30,147,779	543,325	18·02	501,482	16·6
1873	30,287,842	527,363	17·4	506,894	16·4
1874	30,360,221	569,631	18·7	516,848	17·0
1875	30,278,903	625,953	20·6	641,260	21·1
1876	29,157,056	619,748	21·2	680,384	23·3
1877	29,209,542	407,543	16·01	1,556,312	53·2
1878	29,127,205	341,388	11·7	810,921	27·8
1879	28,991,267	467,938	16·1	549,390	18·9
1880	28,778,097	641,769	22·3	454,101	15·7
1881	28,676,375	716,672	24·9	465,682	16·2
1882	28,887,111	743,777	25·7	470,700	16·2
1883	28,503,100	774,754	27·2	541,930	19·0
1884	28,151,952	810,102	28·8	650,335	23·1
1885	28,118,178	807,105	28·7	615,449	21·8
1886	28,043,538	837,077	29·8	553,927	19·7
1887	27,907,840	849,551	30·4	604,775	21·6
1888	27,852,474	833,345	29·9	597,015	21·4
1889	28,050,087	867,523	30·9	661,178	23·5
1890	28,522,313	893,645	31·3	650,394	22·8
1891	33,683,178	924,238	27·4	747,553	22·2
1892	33,693,179	845,029	25·1	750,755	22·3

The figures given in the preceding table show that there was a progressive increase in the number of births registered from 1889 up to 1891, but that in the year under report there was a great diminution in the number of children born. This sudden fall cannot, however, be ascribed to less correct registration in 1892, but must be regarded as the natural result of the distress which prevailed in the Presidency during 1891 and 1892. It is an admitted fact that the fecundity of a population is directly dependent on, and largely influenced by, the general prosperity of the people, and that high prices of articles of food and their insufficiency in quantity and inferiority in quality, even when not carried to the extent of starvation and famine, have a decided effect in lowering the birth-rate. In many parts of the Presidency in both 1891 and 1892, distress prevailed owing to scanty rainfall and the prices of food were in consequence high.

The birth-rates varied in the different districts, ranging from 17·8 per 1,000 of population in Ganjam to 36·8 in Madras. In no district was the birth-rate above 40 per 1,000, in four it was between 30 and 40, in 17 it was between 20 and 30, and in one district, viz, Ganjam, it was below 20 per 1,000. In some districts, which return low birth-rates, registration is defective. A high birth-rate is not peculiar to any one part of the Presidency, but chiefly depends upon the interest taken in this subject by the officials whose duty it is to do so. In all the districts, with the exception of South Canara and Nilgris, the birth-rates were lower than the average for the previous 10 years. Comparing the birth-rates of 1892 with those of 1891 it is observed that in only three districts (Górávari, South Canara and Tinnevely) the birth-rates were higher, while in the remaining 19 districts they were lower. The decrease was most marked in the districts of Salem, Chingleput and North Arcot. The highest birth-rates were obtained by Madras (36·8), Bellary (32·5), and South Canara (31·9), and the lowest by Ganjam (17·8), Malabar (20·4), and Vizagapatam (21·5).

As has been before remarked the decrease in the number of births registered may be put down to the distress which prevailed in 1891 and 1892. Although there was a decrease in all the districts, with the exception of three (Górávari, South Canara and Tinnevely) in the birth-rates of 1892, when compared with those of 1891, yet those districts in which distress was most severely felt show the greatest diminution in the birth-rate. In nine districts in which relief works were opened the birth-rate fell off considerably, being 25·5 per 1,000 in 1892 or 4·5 less than that obtained for 1891, while in the remaining 13 districts the decrease was very little, the ratio per 1,000 for 1892 being 24·8 or 1·1 less than the ratio for 1891.

Of the 845,029 births registered during 1892 there were 430,997 males and 414,032 females, or in a proportion of 104·0 male to every 100 female births. In 1891 the number of males born to every 100 females was 103·9.

As is generally the case in this Presidency, more births were registered in 1892 during the third and fourth quarters of the year than in the first and second. The highest monthly birth-rate was 2·4, and was recorded for the months of July and October, the lowest (1·8) for the months of February and April. In every month the birth-rates were lower than the averages of 10 years.

As in past years the births exceeded the deaths, but for 1892 the excess was only at the rate of 2·8 per 1,000 of population. In 1890 and 1891 the rates of excess were 8·5 and 5·2 respectively. In 1892 in 15 districts the births registered were more numerous than the deaths, the excess per 1,000 of population ranging from 1·3 in Tanjore district to 9·6 in South Canara district. In seven districts (Cuddapah, Górávari, Madras, Malabar, Kurnool, Nilgiris and Vizagapatam) there was an excess of deaths over births registered. The greatest excess in the death-rates over the birth-rates was in Madras and Górávari.

In the year under report the rural birth-rate for the Presidency was lower than the urban, the ratios being 24·9 and 28·3 respectively. This may be attributed not only to registration being better carried on in municipal towns, but also to the distress which prevailed in 1891 and 1892 having been more severely felt among the rural than the town population. Nearly three-fifths of the population depend primarily for their subsistence upon the produce of the soil, so that failure of the monsoons attacks their means of existence, and thus distress ensues, causing a decrease in the number of births. In six districts (Anantapur, Bellary, Kistna, Kurnool, Tanjore and Trichinopoly) the rural birth-rates were higher than the urban, but in the remaining 15 they were lower. In the Ganjam and Malabar districts the difference between rural and urban birth-rates was very marked, the rural birth-rates being 17·3 and 19·7 and the

urban 31·4 and 30·8, respectively. These marked differences are due to the defective state of the registration of births in the rural tracts of these districts.

The total birth-rate for municipal towns is 29·9 per 1,000 for 1892 against 30·0 for 1891. In only two towns in 1892 was the birth-rate above 40 per 1,000, in 33 it was between 30 and 40, and in 20 it was between 20 and 30. The rates in the various municipalities varied, ranging from 20·9 per 1,000 in Vizianagram and Trichinopoly to 41·3 in Vániyambádi. The average birth-rate of the 55 municipal towns was 5·1 higher than the district rate. In only nine municipalities (Bellary, Bezvada, Masulipatam, Mannárgudi, Kumbakónam, Tanjore, Negapatam, Trichinopoly and Vizianagram) the birth-rates were lower than the district rate. In some towns registration of births is still carried on in an inefficient manner, but, on the whole, there has been found, on personal inspection, evidence of improvement.

In a population of 33,693,179, for which returns were received, the deaths numbered 750,755, being at the rate of 22·3 per 1,000 of population against 22·2 per 1,000 in 1891 and 19·5, the average of five years. The year under report was an unhealthy one, the death-rate being higher than any rate that has been recorded since 1878, and being chiefly due to the exceptional amount of mortality registered under "fevers." The following abstract shows the chief causes of death during 1892 compared with the results of the previous 20 years:—

Years.	Total Deaths.	Cholera.	Small-pox.	Fevers.	Bowel Complaints.	Injuries.	Other Causes.
1872	501,482	13,247	39,074	214,148	39,387	15,150	180,476
1873	506,894	840	51,784	222,843	36,392	14,251	180,784
1874	516,848	313	48,343	226,220	37,993	13,065	190,914
1875	641,260	94,546	24,775	252,042	37,484	12,421	219,992
1876	680,384	148,193	23,469	230,092	38,176	11,175	229,279
1877	1,556,312	357,430	88,321	469,241	133,366	16,460	491,494
1878	810,921	47,167	56,360	374,443	48,083	15,007	269,861
1879	549,390	13,296	17,840	285,477	23,218	12,619	196,940
1880	454,101	613	14,529	209,940	19,622	10,845	198,552
1881	465,682	9,446	15,776	203,542	18,961	11,527	206,430
1882	470,700	23,604	20,159	188,561	19,958	11,611	206,807
1883	541,930	36,284	37,975	203,786	22,098	11,509	230,278
1884	650,335	75,476	61,247	215,977	28,775	11,502	257,358
1885	615,449	58,109	34,726	218,786	31,209	11,659	260,960
1886	553,927	12,417	17,129	221,679	27,379	13,103	262,220
1887	604,775	28,359	21,472	240,860	26,679	11,328	276,077
1888	597,015	58,677	21,858	204,561	27,721	11,401	272,797
1889	661,178	76,020	29,138	230,172	29,122	11,506	285,220
1890	650,394	35,288	28,092	262,855	26,608	10,402	287,149
1891	747,553	98,773	41,322	247,029	34,223	10,542	315,664
1892	750,755	79,083	43,757	280,627	32,293	11,312	303,733

* Dysentery and diarrrhœa only.

There was an increase in 1892, as compared with the previous year, in the number of deaths registered from fevers, small-pox, and injuries, but a decrease in the deaths recorded under cholera, dysentery, and diarrrhœa and other causes.

Of the 750,755 deaths registered, 385,162 occurred among males and 365,593 among females, the annual death-rates per 1,000 of population being 23·1 for males and 21·5 for females. In only four districts the female death-rate was greater than the male death-rate. For every 100 females who died, 105·3 deaths of males were registered, and the proportion varies considerably in some districts.

The mortality amongst infants under one year of age is, as a rule, high. Out of a total death-roll of 750,755, there were 146,948 or 19·6 per cent. of the deaths amongst children under one year of age, and if, as is the rule in England, the death-rate is calculated on the number of children born during the year, it will be found that the death-rate of infants was 173·9 per 1,000. The deaths in children under five years of age formed 34·7 per cent. of the total deaths against 37·3 in 1891. Fewer deaths were registered in 1892 in children under one year than in 1891, and this was doubtless due to a less number of children having been born in 1892. Although a high death-rate among infants is in a great measure due to defective sanitary arrangements, yet there are also several other causes which are to blame for the high mortality, such as the

habits and mode of living of the people themselves and their management of children, unsuitable and insufficient food, early marriages and feeble mothers, &c.

With regard to the influence of sex on mortality, it appears that from infancy up to 15 years of age the death-rate was greater among males than females, but that between 15 and 20 years the death-rate among males was less. From 30 years and upwards females had again the advantage as regards expectation of life.

According to classes the death-rate among Muhammadans was 22·8 per 1,000, amongst Hindus 22·4, amongst Native Christians 16·8, and amongst Other Classes 11·4. The highest rates of Hindu and Muhammadan mortality appear against Madras. In 13 districts (Chingleput, Coimbatore, Cuddapah, Gódvári, Kurnool, Madura, Nellore, Nílگیرis, Salem, Tanjore, Tinnevely, Trichinopoly, and Vizagapatam) no deaths were recorded among Other Classes.

The minimum death period in this Presidency is usually the hottest and driest period of the year (March, April, and May), and the greatest mortality generally occurs in the cold weather, viz., in the months of December and January. The year 1892 was, however, an exceptional one, the highest death-rates occurring in January, July, and August, and the lowest in June, October, and November. The unusual high mortality in the months of July and August was due to the prevalence of cholera in certain districts during these months, especially in the Gódvári, Kistna, Kurnool, Malabar, and Cuddapah districts.

According to districts the highest death-rate (46·5) occurred in Madras and was due to the high death-rate from other causes, fevers, dysentery, and diarrhoea when compared with the ratios of other districts. The death-rate varied greatly in the different districts and, excluding Madras, it ranged from 14·3 per 1,000 in the Ganjam district to 35·1 in the Kurnool district. The low rate returned for Ganjam is due to imperfect registration in parts of this district. The death-rates were lower than the ratios for the previous 10 years in 11 districts (Anantapur, Chingleput, Coimbatore, Ganjam, Madura, North Arcot, Salem, South Arcot, South Canara, Tinnevely, and Trichinopoly), and in the remaining 11 they were even higher. In 11 districts the death-rates in 1892 were also higher than in 1891 and in 11 lower. The largest increase in the mortality took place in the Vizagapatam district, the death-rate in 1892 being 21·7 per 1,000 of population, while in 1891 it was 12·9. In 1892 greater attention was given to registration in this district, and allowing for this the increase was due to the prevalence of cholera in 1892, and also to many deaths having been registered from fevers and small-pox. In Gódvári district the death-rate in 1892 was also much greater than that of 1891, and was due to a large mortality being recorded under cholera and small-pox. The greatest decrease in the mortality occurred in the South Arcot district, the death-rate for 1892 being 18·8 per 1,000 against 29·6 in 1891, and was mainly due to the deaths registered from cholera and small-pox being much less than those in the preceding year. In Madras there was also a marked decrease in the mortality in 1892, the death-rate in 1892 being 46·5 against 53·1 in 1891, and was chiefly due to the deaths recorded under all other causes, cholera and dysentery and diarrhoea being less than in 1891.

The death-rate in 1892 among the urban population was higher than among the rural, the ratios being 27·6 and 21·9 respectively, against 27·4 and 21·9 in 1891. In all the districts, with the exception of Salem and South Arcot, the urban death-rates were higher than the rural. Judging from the death-rates amongst the rural population, the most unhealthy district in 1892, excluding Madras, was Kurnool, where fevers prevailed to a great extent.

The average death-rate of the 55 municipal towns was 29·4 per 1,000 of population, or 7·5 higher than the district-rate. The ratios varied in the different municipalities, ranging from 18·2 in Salem to 55·2 in Kurnool. The high mortality in Kurnool was due to the prevalence of cholera and fevers, and in Cochin to many deaths having been registered under small-pox and other causes.

Chief Diseases.

Cholera.

In 1892 there was a decrease in the mortality from cholera when compared with 1891, the deaths registered in 1892 having been 79,033, or 19,740 less than the number (98,773) recorded in 1891.

The following table shows the ratios of cholera deaths for the previous 20 years, and for 1892 the death-rate was 2·3 or 0·6 less than that in 1891 :—

Years.	Ratio of cholera deaths per 1,000 of population.	Years.	Ratio of cholera deaths per 1,000 of population.	Years.	Ratio of cholera deaths per 1,000 of population.
1872	0·4	1880	0·02	1888	2·1
1873	0·02	1881	0·3	1889	2·7
1874	0·01	1882	0·8	1890	1·2
1875	3·1	1883	1·2	1891	*2·9
1876	5·08	1884	2·7	1892	†3·5
1877	12·2	1885	2·06		2·3
1878	1·6	1886	0·4		
1879	0·4	1887	1·01		

* Calculated on the census population of 1891.

† This is the rate given in the Annual Report for 1891 and was calculated on the census population of 1891.

In no month of the year was cholera absent from the Madras Presidency ; but during the last quarter there was a great decrease in the mortality from this disease. The greatest number of deaths (18,676) was registered in January and the fewest (286) in December. In January deaths from cholera were reported from all the districts with the exception of Bellary, and the number of casualties amounted to 18,676. In February, March, and April there was a progressive decrease, but in May the disease again began to increase, and in July as many as 16,739 deaths were recorded. From August the disease began to decline, and in December deaths from cholera were reported from only 11 districts and amounted, as already stated, to 286 in that month.

In every district in the Presidency deaths from cholera were recorded during the year, and in nine districts (Chingleput, Coimbatore, Cuddapah, Górávari, Kistna, Kurnool, Madras, Malabar, and Salem) deaths were registered during every month of the year. In ten districts (Ganjam, Górávari, Kistna, Kurnool, Malabar, Nellore, South Canara, Tanjore, Tinnevely, and Vizagapatam) the deaths reported were greater than in 1891, and in 12 districts the death-rates were higher than the average of previous five years. The epidemic was most severely felt in the Górávari, Kurnool, and Tanjore districts, the death-rates per 1,000 of population being 6·5 for Górávari, 6·0 for Kurnool, and 4·1 for Tanjore.

In the Górávari district, during the year under report, the number of registered deaths from cholera amounted to 13,618 against 1,496 in the previous year and an average of 3,533 for five previous years. There were some deaths in this district in January, but the disease increased in May, and in July 8,130 deaths were reported. In August there was a decrease, the deaths recorded being 2,296, and in September, October, November, and December the deaths were only 257, 118, 7, and 22 respectively. In 1891 the rainfall was very deficient in this district, only 25·34 inches having been registered against 41·21 in 1890, and 34·71 the average of ten years. In 1892 the rainfall was, however, much above the average, 50·53 inches being registered in that year against 35·75 inches, the average of ten years. In June, July, August, and September the rainfall was above the average, and in October there was an unusual rain, 20·02 inches being registered for that month against an average of 6·16 inches. The District Surgeon reports as follows : “ This disease prevailed for “ about six months in the year and was exceedingly fatal. Ellore seems to be its “ starting point here, being imported from the adjacent Kistna district. On account “ of the free canal communication the epidemic soon spreads. It affects primarily “ and principally the delta taluks. The chief source of drinking-water in the delta is “ the Górávari and its canals; and these canals are frequently polluted by people “ throwing corpses of those dying from cholera and other diseases, thus materially “ aiding the spread of the disease.”

In the Kurnool district during 1892 there were 4,886 deaths recorded from cholera and is the largest total recorded since 1878. The death-rate from this disease was 6·0 per 1,000. The District Surgeon, in his annual report, states that cholera, “ which “ was continuing in a sporadic form in the town of Cumbum at the end of the “ preceding year, began to increase in severity in the month of January and lingered “ on till the month of June, when the disease assumed an epidemic character and “ spread throughout the taluk. In the months of July and August the disease was at “ its height. In September it began to subside and disappeared in October. In the “ month of April cholera appeared in the Markapur taluk, having been introduced “ from Cumbum by pilgrims. In May it reached its acme. It then began to decrease

“ in severity, and in the month of October it had entirely subsided. In the month of May cholera of a very virulent type appeared in the town of Nandyal, having been imported from the Cumbum taluk by a railway passenger, who was carried out of the train cholera-stricken and sent to the civil dispensary for treatment. It assumed large dimensions in the months of July and August, and disappeared by the end of the year. The total number of attacks in the town was 733 with 391 deaths. The disease also appeared in the remaining taluks of the district, but was of a mild type and calls for no remark. Cholera first appeared in the Kurnool town in the early part of July, having been imported by a man from Nandyal, where the disease was prevailing at the time. Several people living in the street where this man resided were next attacked. It then spread throughout the length and breadth of the town, and in the month of August it was most virulent, when 77 deaths were recorded. By the end of September it had entirely disappeared. In August it broke out in the jail and also appeared amongst the troops (a wing of the 14th M.I. being stationed here at the time). Three attacks with one death were recorded in the former and two attacks with two deaths in the latter.” With regard to the rainfall of this district there was a great deficiency of rain in 1891, the rainfall for that year being only 15·41 inches against 29·14 for 1890, and 26·44 the average of ten years. In consequence of the deficient rainfall of 1891 there was great scarcity of drinking-water during the beginning of 1892, and many of the supplies were very impure. In 1892 the rainfall was, however, much above the average, 38·96 inches having been registered, against an average of 27·64. In June, July, August, and September the rainfall was above the average, and in October as many as 10·51 inches were registered against an average of 5·07 inches.

The Tanjore district is the next in order of severity, and the number of deaths registered in 1892 was 9,093 against 6,565 in 1891. The disease was very prevalent in January and February, when 4,549 and 1,945 deaths were registered. It then gradually decreased; in June it again increased, but from August it greatly declined, and in December no deaths were recorded as due to cholera. In this district in 1891 the rainfall was about the average, but in 1892 it was very deficient, only 28·68 inches having been registered against an average of 43·43 inches. The rainfall was above the average in June, July, and August, but owing to the failure of the north-east monsoon the rainfall in October, November, and December was much below the average. The District Surgeon reports: “The health of the district during the early part of the year, viz., from January to August, was not satisfactory in consequence of the prevalence of cholera in an epidemic form continuing from 1891. During August the disease abated considerably, and more so in September, when only 52 deaths occurred throughout the district. In October the figure fell to ten, and in November to two. There were no deaths in December, as the disease had entirely subsided. The names of the taluks that suffered much are given in the margin with the number of deaths in each taluk. It will be seen from the statement of mortality attached to this report that the epidemic of cholera was severe in the majority of the taluks in the months of January and February 1892; in March there was a sudden fall in the number of deaths, viz., from 4,550 in January and 1,946 in February to 532; in April, May, June, and July the mortality ranged between 600 and 400; and in August it fell down to 106. When cholera was epidemic in any taluk the municipality in that taluk did not escape, and the disease showed the same signs of exacerbation and abatement in certain months as already noted above.”

Kumbakonam	-	-	3,669
Tanjore	-	-	2,281
Nannilam	-	-	1,403
Máyavaram	-	-	1,248
Negapatam	-	-	1,071
Shiyali	-	-	1,045

Out of 44,678 villages in the Presidency, 7,840 or 17·5 per cent. were affected by cholera. The highest percentage occurred in the Kurnool district, where, out of 802 villages, 289 or 36·0 per cent. were affected.

In 82 out of 91 towns deaths from cholera were registered, and in the remaining nine no deaths were reported.

Out of a total of 79,033 deaths from cholera for the Presidency 5,116 occurred in municipal towns. In two municipalities, Palni and Ootacamund, no deaths were recorded. The disease affected the urban more than the rural circles, the death-rate being for municipal towns 3·2, or 0·9 more than that of the district. The death-rates of 28 municipal towns exceeded those of the districts, and in 25 towns they were less.

Although many deaths were registered under cholera in 1892 still the year has been one of subsided activity with regard to this disease in the Presidency. No new light

has been thrown upon the etiology of the disease, but there is sufficient evidence to show that insanitary conditions tend to localise cholera, and that the best way of preventing the origin and spread of cholera is to remove all local insanitary conditions and carry out the sanitary measures which are known to be antagonistic to the prevalence of the disease.

During the year under review there was an increase in the mortality from small-pox, Small-pox the deaths in 1892 having amounted to 43,757 against 41,322 in 1891. In the Malabar district the disease prevailed with great severity and caused a little over one-fourth of the total deaths.

The number of deaths registered from small-pox in 1892 was 43,757, or 1·3 per 1,000 of population, against 41,322 or 1·2 in 1891.

The largest number of deaths (6,872) occurred in March and the fewest (1,619) in November. The maximum mortality from small-pox in this Presidency is usually attained during the dry months, and the minimum during the rainy months, and it would appear that rainfall is unfavorable to the prevalence of small-pox and drought favourable to the development of the disease. In both 1890 and 1891 the rainfall was deficient and in each year following these there was a great increase in the small-pox mortality.

There were 6,092 children under one year of age, and 14,314 over one and under 12 years of age who died from small-pox in 1892. The largest number of deaths from small-pox occurred, as is usually the case, among infants and children under 12 years of age, 46·6 per cent. of the total mortality being borne by them. Compared with 1890 and 1891 it is found that the proportion of children who died in 1892 was less than in either of the two preceding years.

In all the districts there were deaths registered from small-pox in 1892. In 10 districts (Anantapur, Chingleput, Cuddapah, Kistna, Madras, Madura, North Arcot, South Arcot, Tanjore and Tinnevely) there was a decrease in the deaths from small-pox in 1892 when contrasted with 1891; in 11 there was an increase and in one (Nilgiris) the number of deaths was the same. Although the mortality from this disease was greater in 1892 than in 1891, yet it will be seen that the increase is chiefly due to the great prevalence of small-pox in the Malabar and Godávári districts, where 7,320 more deaths were registered in 1892 than in 1891. As regards the excessive death-rate (4·4) in the Malabar district, vaccination has always been opposed by the people, and its practice is carried on under many disadvantages. In this district, the houses, as a rule, are scattered and are not collected together as in other districts forming villages and towns, and the females (whose influence on the household is greater in Malabar than in other parts of the Presidency) are greatly opposed to vaccination. Further the Moplah population is very conservative and ignorant and resist any new practice. The District Surgeon, in his report for 1892, states: "Small-pox which had prevailed in epidemic form throughout 1891, continued throughout 1892, causing great havoc; it was present in virulent form throughout the whole district, causing 10,467 deaths against 5,092 in the previous year; the taluk of Ponáni, with its crowded Moplah population and highly insanitary conditions suffering most; 3,356 persons being registered as having succumbed to the disease in that taluk alone. The greatest mortality for the whole district from this epidemic occurred in the first four months of the year, during which period 7,519 persons are registered as having died. At the close of the year, the epidemic was declining but still existed in all taluks." The lowest death-rate (0·06) was obtained by Madras, and vaccination in this town is carried on in a most satisfactory and efficient manner.

Out of the 55 municipal towns, deaths from small-pox were registered in 47, and in eight towns no deaths were recorded. Cochin heads the list with a ratio of 19·9 per 1,000. Vaccination is not compulsory in Cochin, and the people are greatly opposed to it, and many believe that when small-pox is prevalent, vaccination will cause an attack of small-pox. A large proportion also of the deaths from small-pox were not among the residents of Cochin Municipality, but were among people who came from the neighbouring Native States of Travancore and Cochin to be treated in hospital or among the labourers who work during the season in the yards, &c.

Excluding "other causes" by far the largest number of deaths was recorded as due to "fevers." Fevers. The number of registered deaths attributed to fevers in 1892 was 280,627 or 33,598 more than in the previous year, and the mortality was greater than in any year since 1879, when 235,477 persons died from fevers. Although the fever death-rate was made higher in some parts of the Presidency owing to deaths from

influenza being recorded under fevers, yet the principal cause of the increased mortality from fevers was no doubt the heavy rainfall that occurred in 1892; and further the impoverished state of a large part of the population, due to the failure of crops and the consequent high prices of food, lowered the condition of the public health and so rendered many of the inhabitants less able to withstand the effects of the insanitary conditions which surround them. The death-rate from fevers in 1892 was 8·3 per 1,000, against 7·3 in 1891, and 7·3, the average of previous five years.

In all the districts, with the exception of Chingleput, Madura, North Arcot, Salem South Arcot, and Trichinopoly, the death-rates from fevers were higher in 1892 than in 1891. The highest death-rate (22·8) occurred, as usually happens, in the Kurnool district, and the lowest (2·2) in the Tanjore district. The rates of fever mortality were also high in the Nilgiris, Cuddapah, Vizagapatam and Madras districts.

The Presidency district rate was 8·4 per 1,000 of population or 1·4 greater than the municipal Presidency rate (7·0). In 23 municipal towns the death-rates were higher than those of the district and in the remaining 32 municipalities they were lower.

Dysentery
and
diarrhoea.

There were 32,293 deaths recorded under dysentery and diarrhoea in 1892, or 1,930 less than the number (34,223) registered in 1891. The death-rate for 1892 was 1·0. There is no doubt that many of the deaths from dysentery and diarrhoea may be attributed to the people having to resort to unwholesome kinds of food owing to failure of crops and the high prices of food. The district which recorded the highest mortality from dysentery and diarrhoea was Madras, with a death-rate of 8·9 per 1,000, and following it comes Chingleput, with a ratio of 3·2 per 1,000. These two districts usually return the highest death ratios from dysentery and diarrhoea. The lowest ratios were recorded in the Anantapur (0·3), Ganjam (0·4) and Salem (0·4) districts. In eight districts (Bellary, Cuddapah, Ganjam, Godáviri, Malabar, Nellore, South Canara, and Vizagapatam) there were more deaths recorded in 1892 than in 1891, while in the remaining 14 they were less. The largest number of deaths (4,481) was recorded in January, and the smallest (1,830) in April.

The district Presidency rate was 0·8 per 1,000 of population, and was 2·6 less than the municipal Presidency rate (3·4). In 51 municipal towns the death-rates were higher than in the districts, and in four they were lower. The highest death-rate in municipal towns from dysentery and diarrhoea is reported to have occurred at Bimlipatam, where it attained the ratio of 10·7, and next to it comes Tanjore with a death-rate of 8·3. The lowest death-rate (0·3) was registered at Dindigul and Vaniyambadi.

Injuries.

The deaths registered in 1892 from injuries amounted to 11,312, or 770 more than the number (10,542) recorded in 1891. The death-rate per 1,000 of population was 0·3 in 1892. There was an increase in the number of deaths registered from suicides and wounds and accidents in 1892 when compared with 1891 and a decrease in the number of deaths from "snake-bite" and "killed by wild beasts." Excluding towns, the death-rates in the various districts only varied from 0·2 per 1,000 of population in the Ganjam district to 0·5 in the Chingleput, Cuddapah, and South Canara districts. As is generally the case, there were more suicides among females than males. The largest number of suicides occurred in Tinnevely, and in the Nilgiris no deaths from this cause were recorded. There were 7,094 deaths recorded as due to wounds and accidents, and as frequently happens the largest number of deaths occurred in the North Arcot district. Snakes and wild beasts caused 2,098 deaths, the largest number (231) occurring in the Tanjore district.

All other
causes.

The registered mortality from "all other causes" in 1892 amounted to 303,733 against 315,664 in 1891, giving a death-rate of 9·0 per 1,000 for the year under report against 9·4 for the preceding year.

Sanitary Works.

Municipali-
ties.

The number of municipalities administered under the District Municipalities Act IV. of 1884 continued the same as in the previous year, viz., 55. The affairs of each municipal town were looked after by a council consisting of not less than 12 members, and presided over by a chairman, in whom the executive administration is vested. In the City of Madras, however, Madras Act I. of 1884, as amended by Acts VII. of 1884 and II. of 1892, was in operation.

Sanitary Works.—The sanitary works executed during the year under report may be brought under one or other of the following heads :—

- (a.) Sinking, repairing, and cleansing wells, &c. :—
- (b.) Construction and repair of drains, public latrines, cinerators, dust-bins, markets, slaughter-houses, &c.
- (c.) Improvement of village-sites, &c.

Detailed information regarding drainage and water-supply works will be found furnished in the report of the Sanitary Engineer printed as Part II. of this volume. As has been pointed out in previous reports the drinking water supplies and drainage of towns remain, as a rule, in a very defective and insanitary condition, and, as often remarked, until they are put in a satisfactory condition a marked decrease in the mortality of our towns cannot be hoped for. In the matter of conservancy there has been improvement in many cases and particulars of the establishments maintained and material employed for conservancy purposes in the various towns show that under all heads, with the exception of "Sweepers, &c.," and "Public latrines," there was an increase in 1892 as compared with 1891. The staff employed in each town worked under the immediate supervision of the chairman assisted by the divisional councillors. In most towns the servants were more closely looked after in 1892, while in a few the control exercised was indifferent or lax. The cleanliness of towns depends not only on the numerical strength of the staff employed but chiefly on the degree of care and interest evinced by the authorities concerned in the cause.

The total estimated receipts of the towns for 1892-93 were Rs. 25,51,800 against Rs. 26,52,995 for the previous year. Of this amount Rs. 15,39,485, or 60·3 per cent., was assigned for expenditure on sanitation, and the actual outlay incurred during the first nine months of that year was Rs. 7,85,927, or 51·1 per cent. In the 41 towns less than 75 per cent. of the allotment was utilised in the period under notice.

The Madras Local Boards Act V. of 1884 was in force in all the districts of the Presidency except Madras, which has an Act of its own (Act I. of 1884 as amended by Acts VII. of 1884 and II. of 1892). The number of districts administered under the above Act was the same as in the previous year, viz., 21, each being conterminous with the corresponding revenue district. The affairs of each district were managed by a Board designated the District Board, consisting of not less than 24 members, presided over by the Collector, who, for purposes of the Act, was styled the President. Each District Board had subordinate to it a number of Taluk Boards and Union Panchayats. District Boards.

Sanitary Works.—As usual the works undertaken and carried out during the year under report consisted in sinking and repairing wells, construction and repair of tanks, latrines, drains, dust-bins, &c., and improvement of village sites and water supply generally.

Water Supply, Drainage, and Conservancy.—The sources from whence people had their supply of water were as usual either tanks, wells, ponds, rivers, springs, or canals. Over a great many of these sources watchmen were placed to guard them from pollution, and a number of tanks and wells were cleaned and deepened. As regards drainage there had been no change in the system pursued. Side cuttings, chiefly intended to carry off rain water, were the only means whereby villages were drained. Out of an aggregate of 44,622 villages, 910 were conserved against 862 in 1891. Of these, 330 were unions and 580 other villages, the corresponding numbers of the previous year being 272 and 590. As in the previous year Górávari took the lead, the number of villages conserved being 118, and the Nílگیرis brought up the rear.

The total estimated income of the districts for 1892-93 was Rs. 79,04,903 against Rs. 83,04,687 in 1891-92, and of this sum Rs. 6,31,741, or 8 per cent., was allotted for sanitary purposes. During the last nine months of the year 57·4 per cent. of the allotment was utilised. In no less than 14 districts the assignment for sanitation was not fairly worked up to.

General Remarks and Personal Proceedings.

I carried on the duties of Sanitary Commissioner and Surgeon-Major Dymott, those of Inspector of Vaccination and Deputy Sanitary Commissioner throughout the year. I inspected 27 municipal towns and 55 smaller towns and villages during the year, and Surgeon-Major Dymott 24 municipal towns and 73 smaller towns and villages.

Reports on all the municipal towns inspected were submitted to Government and also to the chairmen of municipal councils. In the appendix will be found two tables, one showing the names of the municipalities inspected during the year with dates of inspection, &c., and the other the names of the smaller towns and villages visited. The time I spent on inspection duty was about five months and by the Deputy Sanitary Commissioner five months.

As has been the practice in this Presidency for many years now—since 1879—intimation of my intended visit to municipalities is given, and during my inspections I am accompanied by the chairmen and generally also by some of the municipal councillors. All matters of sanitary interest are then discussed and all defects observed during my inspection are pointed out on the spot and the manner in which they could most easily be remedied is explained. At the same time the birth and death registers are examined and the importance of exercising a careful and strict supervision over this work is explained. Although in places the returns are still inaccurate, yet steady improvement on the whole is being made in the work of registration of births and deaths.

There is no doubt that progress in sanitary matters is being made in most municipalities and that many chairmen and municipal councillors are thoroughly aware of the close relation that exists between the sickness and mortality from which the people annually suffer and the insanitary conditions among which they live, and as far as lies in their power do all that is possible with the means at their disposal to remove existing defects and adopt measures to protect the public health. Many insanitary defects, however, still exist in all towns, and their removal must be a work of time and require a large expenditure of money.

In most municipal towns a supply of good drinking water is much required, and there is also urgent need for comprehensive schemes of drainage. Projects, however, for supplying some towns with wholesome drinking water have been sanctioned and the works are now in progress, while for other municipalities water-supply schemes are being prepared. The drainage of towns is still in a very defective condition and efficient sewerage systems for the quick removal to safe distances outside the towns of the foul matters which now pollute the soil, air and water are urgently required for many places. The percolation of sewage through the soil is one of the most active causes in Indian towns of the impurity of the well water, and in towns which depend on local wells for their supply of drinking water the purification of the ground which efficient works of drainage are capable of doing will result in the purification of the water of wells also. The removal of burial grounds from the midst of inhabited areas has engaged the attention of many municipal councils, but in places it has been met by great opposition, and it is found difficult to alter old established customs (which by many are thought harmless) in the interests of hygiene. The necessity for such a step is evident, for not only do grave-yards cause pollution of the soil, but also of the air and water in their neighbourhood.

With regard to sewage farming it is still carried on in very few places, and, as before remarked, there are no proper drainage systems for towns, and the sewage either sinks into the ground or finds its way into any depression or nullah. The only changes during the year have been the following. The small sewage farm which was started at Salem two years ago has now been abolished, as the owner of the land declined to lease it out. There is a farm in Tanjore adjoining the fort ramparts which is irrigated with sewage. It is 65 acres in extent and is leased out to a contractor for Rs. 1,950 per annum.

In a few municipalities (10) the plan of burying night-soil in shallow trenches and then utilizing the land for cultivation has been introduced and is likely to become popular and prove a success. In Vizagapatam cholum, cumbu, horse gram and vegetables have been grown on land which had been trenched with night-soil with good results.

The question of disposing of refuse unfit for agricultural purposes is one which has been engaging the attention of many councils. As towns increase and grow in density, the safe disposal of street sweepings and other rubbish of small or no manurial value is a matter which requires the careful attention of municipal councils, and it is very necessary that this refuse should be so dealt with that what remains of it after treatment shall be innocuous whatever may be its ultimate destination. On no account should this refuse be used to raise ground or fill up pits, &c., in the midst of inhabited areas or in places where the ground may likely be used for building purposes, and undoubtedly the best way of disposing of this refuse is by fire.

With regard to the progress sanitation is making in villages it is evident from the numerous inspection reports received from the District Medical and Sanitary Officers that sanitary matters are engaging the attention of the district authorities, and that an improvement in the sanitary condition of smaller towns and villages has been and is being effected in all districts. Nearly everywhere efforts are being made to ensure greater surface cleanliness and in many parts the drinking water supplies have been improved. Wells and tanks have been cleansed, repaired and put in a more satisfactory condition and new wells have been constructed.

There were 1,068 places inspected in 1892 against 454 in 1891. Eighty-two places were inspected more than once during the year.

ABSTRACT OF REPORT OF THE SANITARY COMMISSIONER FOR BOMBAY FOR 1892.

(*Dr. C. W. Macrury.*)

General Population.

Vital
Statistics.

Regarding the arrangements for testing the record of vital statistics by the vaccination staff, the mode of procedure is as follows: On a vaccinator arriving at a village, the children available for vaccination are collected, their names and ages taken down and the village birth register examined and the names found out. If a name is not in the village register, inquiry is made as to the place of birth. In the case of a child whose name is found in the birth register and not in the death register who has not been produced, inquiry is made as to why the child has not been brought forward. A list of the discrepancies found out is drawn up and sent to the Deputy Sanitary Commissioner, who forwards it on to the Collector of the district by whom further inquiry is made, and, if necessary, steps are taken to ensure more accuracy.

In the Presidency of Bombay, including Sind, during the year 1892 there were 650,667 births registered against 682,677 in 1891. The recorded births for the year under report were thus 32,010 less than the number registered in the previous year, but exceeded the mean of the preceding 10 years ending 1891 by 63,765. By sexes there were 337,150 males and 313,517 females against 354,630 and 328,047 respectively in 1891.

The following table shows the number of births registered in each year from 1882 to 1892, their ratios per 1,000 of population, and the proportion of males to females:—

YEARS.	Population.	Number of Births Registered.			Ratio per 1,000 of Population.			In every 100 Births there were		For every 100 Male Births the Females were
		Males.	Females.	Children.	Males.	Females.	Children.	Males.	Females.	
1882 - - -	16,454,414	255,927	235,419	491,346	15.55	14.31	29.86	52.09	47.90	91.98
1883 - - -	16,454,414	261,966	239,835	501,801	15.92	14.58	30.50	52.20	47.80	91.55
1884 - - -	16,454,414	278,986	255,737	534,723	16.96	15.54	32.50	52.17	47.83	91.67
1885 - - -	16,454,414	298,406	274,025	572,431	18.14	16.65	34.79	52.13	47.87	91.83
1886 - - -	16,454,414	303,376	278,177	581,553	18.44	16.90	35.34	52.17	47.83	91.69
1887 - - -	16,454,414	327,500	300,693	628,193	19.90	18.27	38.18	52.13	47.87	91.81
1888 - - -	16,454,414	330,316	304,377	634,693	20.07	18.50	38.57	52.04	47.96	92.15
1889 - - -	16,454,414	312,974	287,515	600,489	19.02	17.47	36.49	52.12	47.88	91.87
1890 - - -	16,454,414	333,698	307,417	641,115	20.28	18.68	38.97	52.05	47.95	92.14
1891 - - -	18,820,346	354,630	328,047	682,677	18.84	17.43	36.27	51.95	48.05	92.50
Mean for 10 years	16,691,007	305,778	281,124	586,902	18.32	16.84	35.16	52.10	47.90	91.94
1892 - - -	18,820,346	337,150	313,517	650,667	17.91	16.66	34.57	51.82	48.18	92.99

The recorded birth-rate for the year was 34.57 per 1,000 of population against 36.27 in 1891, and a mean of 35.16 for the previous 10 years.

By months the greatest number of births (61,727) was registered in June, and the least (47,699) in February. In 1891 the highest and lowest numbers (62,408) and (49,645) respectively were registered in the months of June and January.

Of the 24 collectorates, the number of recorded births in 1892 was higher than in 1891 in the collectorates of Násik, Thána, Kolába, Ratnágiri and Kánara. The remaining collectorates show a decrease as compared with 1891. The registration of births throughout the Province of Sind is defective, especially in Thar and Párkar and Hyderabad collectorates. The City of Bombay shows practically the same recorded birth-rate (18.87 per 1,000) as last year, and is less than the mean of the past 10 years, which is 19.47 per 1,000, a very low figure.

The recorded birth-rates among the urban and rural populations of the Presidency were respectively 28.24 and 35.46 against 28.63 and 37.34 in 1891. Except in the collectorates of Ahmednagar, Ratnágiri, Dhárwár, Bijápur, Karáchi, Hyderabad, Thar

and Párkár and Shikárpur, the birth-rates were higher amongst the rural than in the urban population. It was the same in 1891, except in Ratnágiri, Bijápur, Kánara, Karáchi, Hyderabad, Shikárpur, and Upper Sind Frontier. In the collectorate of Kánara the birth-rates among the rural and urban populations were 31·00 and 31·66 per 1,000 respectively.

Out of 56 towns in the Presidency 14 had a birth-rate exceeding 40 per 1,000. Attention has been repeatedly drawn to the low birth-rate shown by such towns as Thána, Mahád, Bombay, Alibág, Kalyán, and Násik. Progress has been made, but at a slow rate, and much more attention is required to this important point. Kalyán, owing to some changes in municipal management, shows this year a great advance, from 13·24 in 1891 to 23·08 in 1892, and it is hoped that this will be continuous.

Among the civil population in the rural, town and cantonment circles in the Presidency, 611,742 deaths were registered during the year 1892. In 1891, 513,132 deaths, or 98,610 less than in 1892, were recorded. The year was unhealthy, and from the following causes:—In the early part of the year the influenza, which prevailed during the latter part of 1891, still continued in Sind and Gujarát. There was also great scarcity in parts of the Southern District in the first half of the year. Then in April cholera began and prevailed all over the Presidency, reaching its maximum in July. Heavy rain in the month of September caused an outbreak of fever, most noticeable in Gujarát.

The following statement shows the number of deaths recorded in each year since 1882:—

1882 - - -	343,418	1886 - - -	381,185	1890 - - -	463,616
1883 - - -	420,198	1887 - - -	455,261	1891 - - -	513,132
1884 - - -	408,409	1888 - - -	468,039	1892 - - -	611,742
1885 - - -	473,591	1889 - - -	518,562		

Of the total deaths registered, 317,031 occurred among males, and 294,711 among females, against 267,282 and 245,850 respectively in 1891.

The computed death-rate per 1,000 of population in 1892 was 32·50 against 27·26 in 1891, and a decennial mean of 26·63. The millesimal ratio of males dying to males living was 32·56, and of females dying to females living 32·45. In 1891 these ratios were respectively 27·46 and 27·07. For every 100 females who died 107·57 deaths among males were recorded, but these proportions varied considerably in the following collectorates:—

In Kánara the ratio of male to female deaths was 115·54 per cent.

„ Broach	do.	do.	110·96	„
„ Kaira	do.	do.	114·62	„
„ Karáchi	do.	do.	119·31	„
„ Hyderabad	do.	do.	121·69	„
„ Thar and Párkár	do.	do.	120·60	„
„ Shikárpur	do.	do.	113·46	„

In 1892 the recorded death-rates per 1,000 of population were lower than in 1891 in the collectorates of Khándesh, Násik, Ahmednagar, Sholápur, Bijápur and Broach. A large increase in the death-rate occurred in the collectorates of Belgaum and Dhárwár, in the Sind District and the Gujarát District, except Broach. In Sind the increase was due to cholera and fever, and in Broach the increase was almost entirely due to deaths returned under the head “fever.” The recorded death-rate per 1,000 of population in 1892 was higher than the annual mean of the preceding 10 years in all the collectorates except Khándesh, Sholápur, and Bijápur. The death-rate (25·94 per 1,000 of population) in Thána was nearly the same as that of the annual mean of the preceding 10 years (25·04 per 1,000).

The death-rate by collectorates ranged from 47·51 per 1,000 in Ahmedabad to 20·93 in Ratnágiri. In 1891 the maximum and minimum ratios (42·11 and 14·99 per 1,000 respectively) occurred in Broach and Upper Sind Frontier.

According to age, the mortality amongst infants under one year and children above one year but under five was, as usual, very high in comparison with other periods of life, the death-rate amounting to 40·87 per cent. of the total deaths. The period of greatest immunity was as last year in the age period of above 10 and under 15, the rate being 9·46 living or 2·82 per cent. on the total deaths per 1,000. The percentage on total deaths amongst infants under one year was 19·95 against 22·18 in 1891. For those above one and under five the percentage on total deaths was 20·92 against 21·61 in 1891. Among old people of 60 and upwards the percentage on total deaths was 14·07 against 14·29 in 1891.

According to the census of 1891, the Mahomedan population numbered 3,501,910 persons, amongst whom, in 1892, 116,987 deaths were recorded against 76,401 in 1891, the death-rate being 33·41 per 1,000 of population against 21·82 in 1891. The Hindu population amounted to 14,897,629 persons, amongst whom 487,917 deaths or 32·75 per 1,000 of population were recorded. In 1891 the total deaths amongst this race were 431,153, equal to a death-rate of 28·94 per 1,000 of population. Amongst the Christian population, numbering 122,089 persons, 2,711 deaths were reported during the year against 2,433 in 1891, the death-rate being 22·21 against 19·93 per 1,000 in 1891. Under the heading "Other Castes" are included all those not belonging to either of the above sects who by the census of 1891 numbered 298,718 persons, amongst whom during 1892 there were 4,127 deaths against 3,145 in 1891, the death-rate being 13·82 per 1,000 against 10·53 in 1891. Among Mahomedans the maximum death-rate during the year (44·51 per 1,000) took place in the collectorate of Ahmedabad, and the minimum (17·81 per 1,000) in Khándesh. In 1891 the maximum death-rate was 38·68 per 1,000 in Násik, and the minimum 14·34 per 1,000 in the Upper Sind Frontier. Among Hindus the maximum death-rate (47·91 per 1,000) was in the collectorate of Ahmedabad, and the minimum (20·82 per 1,000) in Ratnágiri. In 1891 these rates were in Broach (46·83 per 1,000) and Hyderabad (19·10 per 1,000) respectively. The maximum death-rate during the year amongst Christians was 36·14, and was reported from the collectorate of Shikárpur, and the minimum (3·11) from Khándesh. In the collectorates of Broach, Panch, Maháls, Thar and Párkar, and Upper Sind Frontier no deaths amongst Christians were reported in 1892.

The subjoined table shows the deaths in 1892 arranged according to the specified causes laid down by the Government of India, and contrasted with the results for 1891 and the mean of the preceding 10 years. The causes of deaths will be briefly noticed in the next section :—

Causes of Death.	MEAN FOR 10 YEARS, 1882-1891.		1891.		1892.	
	Number.	Ratio per 1,000 of Population.	Number.	Ratio per 1,000 of Population.	Number.	Ratio per 1,000 of Population.
Cholera	21,286	1·27	17,850	0·95	42,900	2·28
Small-pox	5,183	0·31	1,491	0·08	2,770	0·15
Fevers	305,672	18·32	368,913	19·60	438,038	23·27
Dysentery and diarrhoea	39,133	2·34	37,728	2·00	35,406	1·88
Injuries	5,773	0·35	5,887	0·31	5,432	0·29
Other causes	67,493	4·04	81,263	4·32	87,196	4·63
All causes	444,540	26·63	513,132	27·26	611,742	32·50

The recorded death-rates among the urban and rural population of the Presidency were respectively 36·13 and 32·00 per 1,000 of population against 29·45 and 26·96 in 1891.

Chief Diseases.

Cholera.

During 1892, cholera caused 42,900 deaths throughout the Presidency, or 25,050 more than in the preceding year. The epidemic, as will be seen from the subjoined table, was most prevalent in the Dhárwár, Hyderabad, Karáchi, Belgaum, and Shikárpur collectorates, where 8,314 or 7·91, 5,762 or 6·27, 5,600 or 9·98, 5,259 or 5·20, and 3,297 or 3·60 deaths per 1,000 of population respectively took place; whilst the minimum mortality occurred in Broach and Ratnágiri collectorates, in which there were 16 and 94 deaths respectively registered.

In December 1891, cholera deaths were reported from six collectorates, including Dhárwár and Kánara. In these two collectorates only the disease continued in January of the present year, and 665 deaths were reported. There was also one death in the City of Bombay. From the same places 1,008 deaths were reported in the month of February. In March 1,672 deaths were returned from three collectorates, namely, Bombay City, Belgaum and Dhárwár. In April the disease increased, and caused 3,078 deaths in 10 collectorates. In May the disease had spread to 15 out of the 24 collectorates in the Presidency, and 6,050 deaths were reported from it. In June it assumed a still greater intensity, and no less than 8,089 deaths were reported from all the collectorates except Broach, Kaira, and Ahmedabad. During July the disease

assumed an epidemic form, as the mortality rose to 14,694, the maximum for the year, and it was present more or less in 23 zillas. In August there was a great decrease, 5,238 deaths having been reported. In September and October it rapidly subsided, as there were 1,562 deaths in the former, and 436 in the latter month. In November there were 215 deaths from this disease in 15 collectorates, whilst in December 191 deaths, the monthly minimum for the year from the same cause took place in 12 collectorates.

In the Karachi collectorate the death-rate attained the high ratio of 9.93 per 1,000 of population. In the Dhárwár, Hyderabad, and Belgaum collectorates there were also high death-rates, namely, 7.92, 6.27, and 5.20 per 1,000, whilst in Upper Sind Frontier, although it was not so intense, it still reached the high ratio of 4.10 per 1,000. The epidemic in the remaining collectorates, although widely distributed, did not exhibit high ratios.

The affected area included 3,079 out of 25,143 villages in the Presidency. The highest percentage took place in Káráchi, where, out of its 791 villages, 424 or 53.60 per cent. were affected. In Belgaum, Dhárwár, Hyderabad, Shikárpur, and Upper Sind Frontier, the percentages were 28.64, 38.34, 30.14, 25.48, and 26.19 respectively, and in the remaining collectorates the percentages were below 20 per cent.

During 1892 there were 2,770 deaths from small-pox (1,418 males and 1,352 females), Small-pox. against 1,491 in 1891 and a decennial mean of 5,183.

The Western Registration District attained a small-pox death-rate of 0.31 per 1,000, against 0.15 in 1891, and a decennial mean of 0.43. In the Southern Registration District the ratio was 0.23 against 0.11 in the previous year and 0.49 the decennial mean. In the Central Registration District it was 0.10 against 0.05 in the previous year, and a decennial mean of 0.24. In the Gujarát and Sind Registration Districts, the ratios per 1,000 of population were respectively 0.02 and 0.02 against 0.04 and 0.02 in the previous year, and a decennial mean of 0.13 and 0.25. In collectorates the highest death ratio, 0.67, took place in the town and island of Bombay, and 0.46 in the Dhárwár collectorate, and the lowest 0.00 took place in Kaira and Shikárpur, and 0.01 in Surat and Ahmedabad collectorates. The district of Upper Sind Frontier was free. The Presidency rate was 0.15 against 0.08 in the previous year, and 0.31 the decennial mean.

Of the total small-pox deaths, 24.99 per cent. occurred among infants under one year of age, whilst 46.71 per cent. took place among children over 1 and under 12, the remaining 28.30 per cent. being among persons over 12 years of age.

During 1892, 226,011 males and 212,027 females, or a total of 438,038 persons, Fever. were reported to have died from fever, against 368,913 in 1891, showing an increase of 69,125 deaths for the year, the mean for the previous ten years being 305,672.

In the Gujarát Registration District fever caused a high mortality, 34.89 per 1,000 during the year against 27.62 in 1891, and the decennial mean 24.39. In the Sind Registration District the death ratio was 27.63, against 17.07 in the previous year, and 15.78 the decennial mean. In the Western Registration District the ratio for the year was 20.29 against 20.97 in the previous year, and 18.45 the ten years' mean. In the Central and Southern Registration Districts the respective ratios for the year were 19.62 and 18.24, against 18.11 and 14.65 in the previous year, and 17.54 and 15.31 the ten years' means. Excepting the three collectorates of Khándesh, Násik, and Broach, in every collectorate the fever death-rate was higher than that of the previous year, and in 11 collectorates it was above the average rate of 23.27. The collectorate of Ahmedabad heads the list with the very high ratio of 41.41, against 31.44 in 1891, and 25.53 in the previous ten years. In the following collectorates high death ratios occurred:—Broach 35.06, Shikárpur 34.49, Kaira 33.76, Surat 31.22, Upper Sind Frontier 27.49, Káráchi 26.70, Panch Maháls 26.25, Násik 24.44, Khándesh 24.11, and Thar and Párkár, 23.99, the Presidency rate being 23.27 against 19.60 in the previous year and 18.32 the decennial mean.

Excepting in the months of April, May, June, and December, the deaths from fever were both above the mean and of the corresponding months of 1891. In April, May, June, and December, these deaths were below the previous year, but they were above the mean. The maximum mortality from fever took place in January, when 57,782 deaths were reported, and the minimum in June, when 25,480 deaths were recorded from this cause.

Based on the ratio of deaths per 1,000 of population, Sind shows the largest increase in the mortality from fever, being an increase of 11.85 per 1,000 over the mean for ten years. Now, in Sind, the fever deaths in 1891 commenced from November, and show

a large increase, which culminated in January of the present year; the deaths then sank in February to less than half the number of the preceding month, and continued to lessen in number till May, after which the number rose gradually each succeeding month till there was a large rise in October, still further increased in November with a fall again in December. The rainfall greatly exceeded the fall of the previous year, especially in Karáchi, Hyderabad, and Thar and Párkar, but in 1890 there was more rainfall but more distribute^d. The temperature was higher. Generally food-grain was dearer than last year, and there has been a distinct rise in the price since 1887, as shown in the comparative statement. The direction of the wind was from north-north-east or north-west in January, February, November, and December, and from the south, chiefly south-west, from March to October.

Dysentery
and
diarrhoea.

During 1892, dysentery and diarrhoea caused the deaths of 19,349 males and 16,060 females, or a total of 35,406 persons against 37,728 in 1891, and a decennial mean of 39,133.

The Southern Registration District heads the list with a ratio of 4·37 per 1,000 against 4·55 in 1891, and 4·67 the decennial mean. The Western Registration District comes next with a ratio of 2·56, the Central Registration District 1·58, the Gujarát Registration District 0·31, and the Sind Registration District 0·17. In the Presidency the rate was 1·88 against 2·00 in the previous year and a decennial of 2·34. Excepting in the collectorates of Khándesh, Násik, Ahmednagar, Ratnágiri, Bijápur, Broach, Panch Maháls, Thar and Párkar, and Upper Sind Frontier, the death-rate for the year was slightly higher in all the collectorates. The highest ratios recorded were in Belgaum 5·95, Dhárwar 4·97, Násik 3·58, Bijápur, 3·28, and Khándesh 3·25, and the lowest 0·08 in Panch Maháls, and 0·06 in Hyderabad and Thar and Párkar.

During the year in March, July, November, and December, the deaths from dysentery and diarrhoea exceeded those recorded in 1891, but in the other months they were less. The maximum mortality occurred in August and the minimum in February.

Injuries.

During 1892, 3,092 males and 2,340 females, or a total of 5,432 persons, met with violent deaths. The mortality from these causes is less by 455 than that reported in 1891, when 5,887 deaths were recorded. Of the 5,432 deaths, 2,380 happened from drowning, 1,073 resulted from snake bites, 438 from wounds, 184 from hanging, 124 from poisoning, 63 from attacks by wild beasts, and 1,170 from causes not specified.

Other
causes.

The recorded deaths from causes other than those specified number 87,196, of which 43,996 occurred among males and 43,200 among females. The total for 1891 was 81,263. There is an increase of 5,933 under this head.

Sanitary Works—Military and Civil.

All available information under these sections has been thrown into a tabular form, and will be found in Appendices Nos. V. and VI., as directed in paragraph 5 of Government Resolution No. 3393, General Department, dated 28th September 1888.

Personal Proceedings and General Remarks.

I took over charge of the office of the Sanitary Commissioner on the 4th June 1892, from Surgeon-Lieut.-Colonel C. W. MacRury, who proceeded on eighteen months' furlough.

The Sanitary Board for the Bombay Presidency was formed on 23rd January 1892, and its proceedings are included in this report.

Before leaving on furlough, Dr. MacRury inspected from the beginning of the year the municipalities of Nadiád, Virámgam, Ahmedabad, Broach, Bulsár, Sholápur, Bijápur, Bágalkot, Gadag Bettigiri, Hubli, Dhárwár, Belgaum, and Sátára, but as remarks on these places have been included in last year's report they are not entered in this.

Most of my touring was done in company of the Sanitary Engineer. In most cases sanitary defects and their remedies were discussed with the members of the various municipalities, and a letter on these subjects invariably followed, addressed to the President through the Collector of the district.

ABSTRACT OF REPORT OF THE HEALTH OFFICER OF THE PORT OF BOMBAY.

Shipping and Health of the Port.—The following table gives a summary of the shipping and health of the Port of Bombay and of the work in connexion therewith for the year ending 31st December 1892 :—

Vessels including Native Craft.	Number.	Number of Passen- gers as far as is known.	Number of Vessels inspected.	Number of Persons, including Crew, inspected.	Number of Vessels disinfected.	Number of Persons vaccinated.	DISEASES AND NUMBER OF CASES OF EACH.				Number of Boats with foul or rotten Cargo.
							Cholera.	Small-pox.	Measles.	Chicken-pox.	
Entered - - - - -	48,192	420,372	32	23,431	16	758	4	10	3	2	2
Left - - - - -	56,514	363,512	664	75,659	2	—	—	2	—	—	—
In harbour, including population {	1,297	22,142	23	—	23	86	13	7	6	—	—
	—	—	—	—	1	—	—	—	—	—	1
Total - - - - -	86,003	806,026	719	99,090	42	844	17	19	9	2	3
1891 - - - - -	84,016	800,521	769	103,009	30	1,000	48	12	11	3	16

In the above table the number of crew on board ships entering the harbour during the year is not shown, as no record is kept.

Infected Arrivals.—The following table shows the number of ships which had infectious disease on board on or before entering the harbour :—

Class of Vessel.	Number of Ships.	Total Number of Crew and Passengers.	DISEASES AND NUMBER OF CASES OF EACH.				Suspicious Cargo.
			Cholera.	Small- pox.	Measles.	Chicken- pox.	
1. Troop ships - - - - -	2	3,227	—	—	3	—	—
2. Pilgrim ships - - - - -	3	1,580	—	3	—	—	—
3. Other vessels - - - - -	10	1,665	4	7	—	2	—
4. Vessels with suspicious cargo (hides from East African ports or rotten fish) - -	2	25	—	—	—	—	2
Total - - - - -	17	6,497	4	10	3	2	2
1891 - - - - -	12	4,178	5	4	11	3	6

The above table does not include the cases of infectious disease which occurred on vessels in the harbour or among the harbour population.

The cases of measles on board of Her Majesty's Indian troopships were landed and isolated in the Military Cantonment at Colába. The pilgrim and other ships with small-pox were only detained until all on board had been vaccinated and the vessels thoroughly disinfected. This detention lasts from two to six hours, but it all depends on the number of crew and passengers who are to be vaccinated.

No pilgrim ships returned from Jeddah with cholera during the year.

In addition to the ships shown in the above table a large number of others, including native craft and coasting steamers, were inspected during the year, but as no infectious disease dangerous to life was found they are not included in the return.

The following table shows the total number of vessels bound for all quarantine ports which were inspected and granted Form B. Bill of Health during the year 1892 :—

No.	Class.	Number of Vessels.	Tonnage (Net).	Total Number of Crew, Passengers, Pilgrims, and Troops.
1	Square-rigged vessels and steamers	449	828,741·23	41,331
2	Native craft	181	22,374·28	4,620
3	Pilgrim ships	19	22,789·37	14,198
4	Her Majesty's Indian Troop, marine ships, and men-of-war.	15	67,764	15,510
	Total	664	941,668·88	75,659
	1891	722	1,074,459·82	82,048

In addition to the above, Form C. Bill of Health was issued to 518 vessels. It is usually taken by vessels bound for Indian, China, and East African ports, where quarantine restrictions are mild or are only put in force against arrivals from places where epidemics are actually prevailing. The total number of bills of health issued, including Form B., was, therefore, 1,162 against 1,264 in the year 1891 and 1,130 in 1890.

The remaining vessels, 35,252 in number, took no bill of health, as they were generally native coasting craft and Shepherd's ferry steamers.

In addition to the 181 outward bound native craft inspected, a large number of buggalows with passengers left for Indian ports, but as almost all of them sail without a bill of health no record is kept.

Disinfection of Ships and General Health of the Shipping.—There were in all 42 vessels disinfected during the year—40 on account of infectious disease and the remaining two for damaged or rotten cargo. The disinfection was carried out in a most satisfactory manner by the Water Police according to the instructions given by the Health Officer.

The general health of the harbour population was reported as good during the year. The St. George's Hospital admitted during that time 596 Europeans connected with the shipping and the harbour, of whom 30 died; whilst the Goculdáss Tejpal admitted 205 natives, of whom 12 died, and the Jamsetji Jijibhoy, 98 natives, of whom seven died. The principal causes of admissions were due to accidents, fevers, venereal, chest, and bowel complaints. There were no cases of bilge poisoning reported during the year.

Quarantine.—During the year 1892 Suez did not impose quarantine against Bombay.

The British India Steam Navigation Company complains of the imposition of vexatious quarantine at Persian Gulf ports. It appears that all arrivals at Bussorah are subject to 24 hours' observation if they have a medical officer on board and to six days' quarantine if they arrive without one, although the bill of health may be absolutely clean and Bombay free from cholera.

The German Line also complains of one of its steamers being quarantined at a Spanish port for 13 days on account of the mention of two sporadic cases of cholera in the necrological certificate furnished to all vessels proceeding through the Canal.

Red Sea Pilgrim Traffic.—Nineteen pilgrim vessels with 12,787 souls left Bombay for Jeddah during the year, and 19 ships arrived from Jeddah on board of which 11,994 souls embarked. Of these, 2,403 were landed at Hodeida, Aden, Muculla, and Karáchi, and 9,490 at Bombay. On the outward voyages there were 27 deaths, or at the rate of 55 per 1,000 per annum, while on the return voyages there were 101 deaths, or at the rate of 219 per 1,000 per annum on the basis of a 14 days' voyage. The mortality on shore is not included as only deaths on board ship are noticed.

The defective sanitary condition of pilgrim ships is due to overcrowding of passengers and baggage, and the absence of any rule insisting on a specified area of ventilation per passenger, and also to the fact that the officer who surveys the ship under the Native Passenger Ships Act is considered by the Code to be an expert in ventilation, no matter what his qualifications may be.

During the year 1891 pressure was brought to bear on shipowners to remedy the defective ventilation, and after two steamers were refused bills of health until the improvements suggested were carried out, no further difficulty was experienced in obtaining a better state of things on board the other vessels engaged in the traffic.

The year 1891 was a favourable one when compared with previous years, inasmuch as the mortality on board was less by over 40 per cent. on both the outward and inward voyages. In the year 1892 the mortality was also comparatively low when compared with that of previous years.

The pilgrim traffic is a most important one on this side of India, representing as it does the departure from Bombay of 11 to 15 thousand pilgrims annually on a long voyage. I give a table showing the number of pilgrims who left and arrived at Bombay during the last eight years, from which it will be seen that a large number never returned; and whether this is due to deaths while on the Haj, or whether they returned to their homes by other routes, I am unable to say. It is probably due to both causes; but I believe the greater number of the missing are accounted for by epidemic disease in Mecca, starvation, and, it is rumoured, ill-treatment by Bedouins while on the land journey from Jeddah to Mecca and Medina. Her Majesty's Consul at Jeddah complains that one-third of the Indian pilgrims are paupers. The practice that shipowners have of giving free passages to paupers to fill up the vessel to her full complement on her departure from Bombay cannot be too strongly condemned. They go on board at the last moment without food or clothing and help to swell the mortality:—

In the Year.	NUMBER OF PILGRIMS WHO			In the Year.	NUMBER OF PILGRIMS WHO		
	Left Bombay.	Returned to Bombay.	Difference (Missing).		Left Bombay.	Returned to Bombay.	Difference (Missing).
1885	8,436	5,045	3,391	1890	11,665	8,662	3,003
1886	8,606	6,150	2,456	1891	14,068	8,677	5,391
1887	9,466	5,726	3,740	1892	12,787	9,490	3,297
1888	13,970	6,505	7,465	Total	91,493	60,356	31,137
1889	12,495	10,101	2,394				

The accuracy of these figures has been questioned, and I admit the above return is only approximate; but if the exact numbers of Indian and Eastern pilgrims who landed at and returned from Jeddah could be obtained for a series of years, they would, I believe, prove that the above figures are in the main correct, showing as they do that one-third of the pilgrims who leave Bombay never return, and in support of this statement Her Majesty's Consul at Jeddah has favoured me with a return for the Haj seasons of 1891 and 1892, which shows that for the 52,518 Eastern pilgrims who arrived at Jeddah, only 37,048 left for the East. The departures fall short of the arrivals by 15,470, or about one-third, and of these no satisfactory information can be given.

Table supplied by Her Majesty's Consul at Jeddah showing the Number of—

Nationality.	PILGRIMS WHO ARRIVED AT JEDDAH FROM THE EAST DURING THE HAJ SEASONS OF 1891 AND 1892.				PILGRIMS WHO LEFT JEDDAH FOR THE EAST AFTER THE HAJ SEASONS OF 1891 AND 1892.		
	Pilgrims landed at Jeddah <i>viâ</i> Cameran.	Pilgrims landed at Jeddah <i>viâ</i> Suez.	Pilgrims landed at Yembo.	Total.	Pilgrims who departed <i>viâ</i> Strait of Babelmandeb.	Pilgrims who departed <i>viâ</i> Suez.	Total.
1891.							
Indians	11,015	20	12	11,407	7,770	—	7,770
Javanese	10,636	181	—	10,817	7,557	—	7,557
Persians	1,072	645	237	1,954	471	200	671
Bokharies	1,086	557	410	2,053	822	585	1,407
Total for 1891	23,809	1,403	659	25,871	16,620	785	17,405
1892.							
Indians	10,916	43	—	10,959	8,748	—	8,748
Javanese	11,500	8	—	11,508	7,204	—	7,204
Persians	431	590	—	1,021	603	342	945
Bokharies	2,755	404	—	3,159	2,373	373	2,746
Total for 1892	25,602	1,045	—	26,647	18,928	715	19,643
GRAND TOTAL	49,411	2,448	659	52,518	35,548	1,500	37,048

Of the 26,647 arrivals at Jeddah, shown in the above table for 1892, 12,787 left Bombay in pilgrim ships, that is ships that carried 60 or more pilgrims. The remainder came from Calcutta, Singapore, Batavia, Zanzibar, Bussorah, &c.

I also append a table showing the mortality among pilgrims on board ships on their return voyages from Jeddah since 1885 :—

Year.	Ratio of Deaths per 1,000 per annum.	Remarks.	Year.	Ratio of Deaths per 1,000 per annum.	Remarks.
1885	301	Deaths per thousand per annum on the basis of a 14 days' voyage.	1889	238	Deaths per thousand per annum on the basis of a 14 days' voyage.
1886	379		1890	287	
1887	291		1891	176	
1888	275		1892	219	

The heavy death-rate on the return voyage is due to privation before they embark at Jeddah, starvation, overcrowding, and sickness on board insanitary ships, want of supervision, and to the fact that a number of the pilgrims are old, sick, blind, lame, and infants of a few days old. Making, however, all due allowance for the latter causes, it must be admitted that the death-rate is enormous and far exceeds that of the old days before the various Emigration Acts were passed. As the defects in the traffic as well as the suggestions made for its improvement have been noticed in detail year after year and in special reports for the information of Government, it is not necessary to recapitulate them here. The pilgrim traffic as regards space, ventilation, food, baggage, and Government supervision should be placed under the same rules as apply to people and ships coming under the Indian Emigration Act.

The system of counting two children under 12 years as an adult pilgrim for the purpose of allotting the space should be discontinued, and each soul on board, whether under or over 12, should receive the space sanctioned for an adult. I have seen males with moustaches and females the mothers of children counted as children, and, as such, receive only half the accommodation assigned to adults, viz., $4\frac{1}{2}$ superficial and 27 cubic feet.

If the Turkish authorities insist on all Indian pilgrims undergoing ten days' quarantine at Cameran, its sanitary condition, which is reported to be bad, should be improved, and water condensed as at Aden supplied to the pilgrims. It is not uncommon on the departure of a pilgrim ship from Bombay to see a large portion of the upper deck, which is supposed to be reserved as an airing place for passengers, occupied by barrels of drinking water belonging to the richer Mussulmans who are making the Haj. This demand is not too much, as pilgrims have to pay Rs. 10 per head for the accommodation and water provided at Cameran.

Although the pilgrim ships leaving Bombay require improvement, I may mention that the accommodation provided in them is immensely superior to what I have seen on board Persian Gulf and Zanzibar steamers touching at Aden, and this point should be remembered whenever the Turkish authorities complain to the Indian Government about the overcrowding of pilgrim ships. The Turkish authorities apparently make no distinction between Indian ships and those that arrive from such ports as Bussorah, Zanzibar, and the Straits Settlements.

It is seldom that the annual pilgrimage, which draws about 150,000 pilgrims from all parts of the Mahomedan world to Mecca, is not characterised by an outbreak of cholera and small-pox. It is computed on fairly trustworthy data that 20 per cent. die in ordinary years and about 35 per cent. in years marked by virulent outbreaks of epidemic disease. People who return from Jeddah and Mecca describe the state of the sacred cities as filthy in the extreme, more especially after the sacrifice of the thousands of animals which takes place on a certain date.

The point I wish to make clear is that whenever cholera threatens to invade Egypt or Europe, India gets the credit of originating it, and the Egyptian Board of Health, which is composed of delegates from nearly all European nations, endeavour by means of quarantine, rigorously and often vexatiously enforced, to prevent the scourge from spreading towards Europe. I believe that whenever cholera reached Europe, it had its starting point in Arabia and found its way to Europe overland *viâ* Damascus and other Syrian cities. As the question is one of international importance it would be well if the Egyptian Board of Health directed their attention to the sanitary condition of the Haj cities, more especially Cameran, El Tor, Jeddah, Mecca, and Medina. It is stated, but with what truth I do not know, that the road from Jeddah to Mecca and Medina is paved with bones.

Bombay is now, as regards sanitary conditions, the port on which the eyes of Egypt and European Continental nations are turned, and, as a consequence, the medical inspection of all passengers, pilgrims, and ships for European, Red Sea, and quarantine ports is most strict. No ship bound for any of the above ports is granted a bill of health until the crew and every person on board are seen by the Health Officer, who is to satisfy himself that they are free from certain infectious diseases at the time of sailing.

The Jáffer Sulemán Musáffarkhána, which is a building erected on the hollow square principle in Mody Bay, has been much used by the pilgrims, some 6,000 having obtained shelter during the year 1892. The sanitary condition of this very useful building would be improved by opening the large doors, which are situated in each side of the square, thereby allowing a free perflation of air through the pile of buildings situated all round.

Sanitary State of the Harbour and Foreshore.—Although the sanitary condition of the foreshore has been improved very considerably during recent years, there are a few spots which are a blot on this otherwise beautiful harbour; but before noticing them I wish to draw attention to the Ramosis placed on the foreshore by the Port Trust. These men are a failure, as most of them are decrepit and will not or cannot prevent the people from fouling the foreshore. If the present useless watchmen are replaced by men of the Pathán type (who should be well paid and held responsible for the cleanliness of the place), the foreshore would in a short time cease to be a vast latrine.

As the insanitary condition of all the basins, bandars and foreshore and the suggestions made for their improvement have been noticed in the last and previous annual reports, it is not considered necessary to refer to them again in detail, more especially as the Port Trustees are at last taking steps to prevent the discharge of nightsoil, sullage water, and other refuse into the harbour. This is at present done in the most unblushing manner.

The most foul places on the south-west are Victoria Boat Basin and all the foreshore between it and the Gun Carriage Basin. This part of the foreshore and harbour are used for the disposal of all the nightsoil coming from the population of Lower and Middle Colába. The most foul portion of the foreshore here is the private property of the Colába Land and Mill Company. The thousands of people who find shelter on this property are compelled to use the harbour wall and ground in its immediate vicinity for the purposes of nature owing to the want of latrine accommodation. If a visit is paid to this place in the early morning, the most disgusting and demoralising sights will be witnessed. This has been brought to notice year after year.

Some of the bandars to the north of the Prince's Dock are bad owing to the accumulation of fish refuse, heaps of bones to which decomposing flesh is attached, nightsoil, and other abominations. The basins including the Kássara Basin and all the foreshore as far as Sion Bandar are in a very foul condition. At low water they are all exposed to the sun, where they become a festering and putrid mass of rotting matter. At ordinary high tide the sea does not cover the whole of this foreshore, and the drift of old timber, floating-logs, and deleterious matter of all kinds form dams dividing the surface into pools, where an oozy mass of poisonous liquid stagnates.

I also wish to draw particular attention to Back Bay. The complaints this year have been numerous. The bay is fouled by two drains, the worst being situated immediately to the north of the new block of buildings erected by government as family quarters for warrant officers. This drain comes from a chawl close by and discharges on to the sand a most foul-smelling black liquid. Government invited the attention of the municipality to this drain last year, but nothing has been done. A few thousand rupees would buy up the chawl, and if it were demolished, the nuisance would cease. The other place to which I refer is the sewer discharging into Back Bay close to the Marine Lines Station. Another smell which has been complained of by residents in the Marine Lines, and which at times is so bad as to compel military men to send their families elsewhere during its prevalence, comes from Back Bay. It is most noticeable at about full and new moon. At these times the tides are very low, and long stretches of the fouled stoney bottom of the bay containing dead shellfish are left exposed for hours to a burning sun.

The prevailing wind for eight or nine months of the year blows from Back Bay bringing the stench with it. This can be readily verified by a temporary residence in the lines or by walking on the foreshore or driving along the Queen's Road at low water.

The sanitary condition of the Prince's and Victoria Docks is very good, and the latrine arrangements leave nothing to be desired.

ABSTRACT OF REPORT OF THE CALCUTTA MUNICIPALITY FOR 1892-93.

(Mr. J. G. Ritchie, Officiating Chairman.)

PROGRESS OF SANITATION IN CALCUTTA* SINCE 1859.

At the International Congress of Hygiene and Demography held in London in August 1891, a paper was read by the Hon. H. J. S. Cotton, C.S.I., a former chairman of the Corporation, admirably summarising the progress of sanitation in Calcutta. The Commissioners think that they cannot do better than open this report with a reproduction of that summary, the figures, with Mr. Cotton's permission, being brought up to the date of 1st April 1893, except when otherwise mentioned; the figures include the additions rendered necessary by the amalgamation of the suburbs with the town.

MR. COTTON'S PAPER.

The underground drainage system of Calcutta was commenced in 1859. The total expenditure incurred on the work up to the 31st March 1893, is Rs. 1,11,27,700.

The number of premises connected with the sewers is 27,560. There are 43 miles of main or brick-sewers, and 144 miles of pipe-sewers. The enormous improvements effected by the obliteration of the old open drains—an elongated cess-pool, as they have been called—and the substitution of underground drainage in their place, can only be appreciated by those who remember Calcutta in former days; but it may still be partially realised by a visit to the suburbs of the town, where open drains still exist. A survey for the systematic drainage of the suburbs is now in progress.

The total capital sunk in the Calcutta Waterworks is, in round numbers, Rs. 1,63,00,000, of which nearly half has been spent on extensions of the original scheme. This outlay has been amply repaid not only by the improved health of the inhabitants, but also by the increase of wealth and material prosperity which the reputation for good drinking water has attracted to the city. It was officially stated on 1st April 1893 that there were 1,750 standposts on the filtered, and 3,044 ground hydrants on the filtered and unfiltered systems. The number of house-ferrule connections was 20,159. The daily supply had then reached an average of 30·84 gallons of filtered water, and 9·47 gallons of unfiltered water per head of population. The filtered water is of the highest possible quality of purity.

The roadway of the town proper has been augmented during the past 15 years by about 17 per cent., and the area of roads watered by 40 per cent. The lighting of the town has increased from 3,418 lamps to 7,291. The quantity of refuse removed from the town has been nearly quadrupled, having increased from about 80,000 to more than 316,247 tons. About 277 impure and insanitary tanks have been filled up, and tanks, other than those in private enclosures, are now very rare in any part of the town, except in the extreme north. In the place of tanks, the town has been studded with 88 bathing platforms for the use of the poorer inhabitants; six public squares have been constructed and laid out at considerable expense to the great advantage of the people living in the neighbourhood. During the past 10 years Rs. 8,68,961 have been expended on bustee improvement.

It was observed by one of the late health officers of Calcutta, in a published address, that "Calcutta has, to sight and sense, within living memory undergone a revolution," and it may be added that during the past 14 years the changes effected had been more rapid and decisive than in the 20 years which preceded them. Dividing these years into three quadrennial periods, it is found that, during the first of these periods, the total number of deaths in the town proper was 62,226, during the second 49,863, and during the third 38,089 (1890 to 1892). But the improvement is most marked in its

* Throughout this Administration Report, by *Calcutta* is meant the whole area of Municipality under the jurisdiction of the Corporation. The *Town* or the *Town proper* refers to the Municipal Area as bounded before amalgamation, with the Suburbs, and the *Suburbs* or the *Added Area* means the area added at the time of the amalgamation.

effect upon the wealth of the town. It is stated to be, on the whole, a very moderate estimate that, while the population has practically remained stationary, the value of land has more than doubled since 1878, and that the increased value to the owners is about nine crores of rupees. It would be difficult to produce a more decisive tribute to the wisdom of sanitation.

The present recorded death-rate of the town proper averages 27 per 1,000 (1890 to 1892). These statistics, however, place the public health of Calcutta in a fictitiously favourable light. The population is largely an immigrant one, and more than half consists of individuals who are in the full vigour of manhood and womanhood, the majority of whom, when they become seriously ill, leave Calcutta for their homes. On the other hand, it is usual among persons of the respectable and middle classes when they are old or ill, to come into Calcutta on account of its superior sanitary attractions and for medical attendance. But, while the death-rate cannot be accepted as an absolute test of the health of the city, the statistics do enable a comparison to be made of the mortality in different years, and it is highly interesting to notice the great diminution in the number of deaths from such principal diseases as cholera since the drainage works have been constructed, a pure water supply given, and other sanitary improvements set on foot.

The mortality from cholera in the town proper has been carefully registered for the past 50 years, and the average annual number of deaths from this cause during each of the five decades is as follows :—

	1840 to 1892.	Average Annual No. of Deaths.
First decade	1840 to 1849	4,818
Second decade	1850 to 1859	4,261
Third decade	1860 to 1869	4,747
Fourth decade	1870 to 1879	1,327
Fifth decade	1880 to 1889	1,640
	1890 to 1892	1,257

There is, no doubt, a marked periodicity in the mortality from cholera, which seems to point to some biological law in the life-history of cholera contagion. The synchronous rise and fall of cholera in Calcutta and in the neighbouring districts of Bengal is of almost invariable occurrence. Calcutta is affected by causes not peculiar to itself, but common to all the neighbouring localities, and although the incidence of mortality is now low in Calcutta, in consequence of the extensive sanitary works which have been undertaken, a more or less corresponding ratio continues to exist between Calcutta and the adjoining populations. It is owing to this periodic intensity of an epidemic wave of cholera, more than to any other cause, that the average number of deaths during the 10 years from 1880 to 1889 exceeds the average of the previous decade. During 1882, 1883, and 1884, there was a violent outburst of cholera, not in Calcutta only, but throughout the neighbouring districts. It is also true that, during the 30 years which preceded the introduction of a pure water-supply, *i.e.*, before 1870, there was a similar periodicity in the cholera death-rate; but during that period the lowest annual number of deaths was 2,268 (in 1867), and 2,502 (in 1848), and the highest was 6,826 (in 1866), 6,553 (in 1860), and 6,427 in (1846), whereas after the introduction of the water-supply the lowest annual death-total has been 796 (in 1871) and 805 (in 1880), and the highest 2,272 (in 1884). Generally speaking, therefore, it may be said that, during the last 20 years, when a pure water-supply has been available, the cholera mortality is only one-third of what it was in former times. It may be admitted, as an eminent authority, Dr. J. M. Cunningham, has pointed out, that the fall in cholera mortality in 1870 was partly due to other causes, and that it was pronounced before one drop of water reached the city; but, be this as it may, the comparative average immunity which has persistently prevailed since 1870, can only be explained by attributing it to the improved water-supply which dates from that year. The change which has taken place in Calcutta in regard to cholera is indeed extraordinary, and sanitarians may well appeal to the evidence of these figures as demonstrating with mathematical certainty that sanitary reform, and, above all, the supply of pure water, is the only effectual method for controlling this terrible disease.

When all has been said, it must be admitted that the conditions of life in the metropolis of British India are still highly insalubrious. The cholera map of Calcutta is still simply a map in which the whole of the native town appears one mass of red

dots indicating cholera deaths, and the inspection of this map, with its record of more than 1,000, cannot fail to awaken a sense of how much remains to be done to improve sanitation. The Health Officer of the Corporation has lately called attention in the most prominent manner to the ventilation of the city by proper streets and squares, and to the enforcement of proper building regulations as the most important sanitary measures which it remains to undertake. Pure air is as much a necessity for the public health as pure water, and the overcrowding of buildings not only impedes the circulation of air and disseminates disease along the poisonous alleys which divide house from house, and harbours the germs of all diseases, but it prevents the possibility of laying down efficient drainage, and hinders and adds to the cost of scavenging. The ground of Calcutta is literally covered with houses without open spaces between them, and narrow streets, winding lanes, and zig-zag passages afford complete obstacles to thorough ventilation. The statistics which the municipal reports furnish indicate the radical structural defects of Calcutta as a residential city. The roadway of the town proper extends over 164 miles, of which only 31 miles are roads of 32 feet in width and upwards; 114 miles vary in width from 9 to 31 feet, 18½ miles are less than 9 feet in width, and 35 miles are sewered ditches, which, from the nature of the case, are often not more than 3 feet in width. The fine new street known as the Harrison Road, which the Municipal Commissioners have, at great expense and with much public spirit, lately determined to cut through that overcrowded and overbuilt portion of the city, is a very important and valuable sanitary improvement. This road is now complete. But it will exercise only a small influence in doing away with the evils of congested and unregulated buildings, unless streets from north to south and from south to north be constructed to meet it. The great structural defect which prevails, especially in Burra-Bazar, but also throughout the whole of the heart of Calcutta, where the residents of the city dwell, is, and always has been, due to the toleration of too many houses and too many people on too limited a space, instead of forcing them to spread out on a wider area. The plan of construction of the city being radically defective, the supply of every other sanitary improvement is only palliative, while that constitutional defect remains. It will never be possible to wipe away the reproach under which Calcutta labours as the home of cholera until the present germ laden air is as purified from contagion as is the filtered water now drunk by the people.

In conclusion, it must be added, in justice to the Corporation of Calcutta, that the Municipal Commissioners are fully alive to the urgent necessity of energetically pursuing the course of sanitary improvement. Immense as are the difficulties of introducing sanitation into an Oriental city according to the Western ideas of the present day, the problem in Calcutta is now in process of solution. Enormous sums have already been spent and will continue to be spent; but it must be remembered that progress can only be gradual, and that the local authorities are hampered not only by financial considerations, but by the conservative habits of the people, which in the eyes of a sanitary reformer appear too often to be purely obstructive. It must be remembered also, that the secret of overcoming this obstruction is to be found, not in attempting to coerce popular feeling by persistent condemnation, but in conciliation and sympathy.

SUMMARY OF ORIGINAL WORKS OF IMPROVEMENT IN PROGRESS DURING THE YEAR 1892-93.

The full detail of these works will be found in the last three chapters of Part I., and in the reports of the Engineer and Health Officer. The following is a general summary of the more important works.

The Harrison Road has been completed, and the electric light upon it installed. The Lansdowne Road has been completed up to the sanctioned limit, and also the Puddopooker Tank Square, near which this road ends at present.

Good progress was made with the construction of the two new settling tanks at Pulta, with a grip drain and metalled road round them. Eighteen miles of pipes for the extension of the filtered water supply have been laid. A new pump for B. engine was installed at Pulta Pumping Station. At Tallah Pumping Station a new workshop has been constructed, and the old workshop has been converted into an economiser chamber.

A large flushing reservoir, holding 300,000 gallons for flushing the Circular Road sewer, was constructed near Bhowanipore Pumping Station. Twenty-nine special flushing chambers were also constructed; 1,214 yards of sewer have been constructed.

Progress was made with the preparation of detailed working plans, &c., for the surface drainage of wards 19, 20, 21, and 22.

Thirteen new railway waggons and 40 new conservancy and road-watering carts were constructed at the workshops.

1,400 feet of public road, and 1,746 feet of bustee road were constructed. 1.68 miles of kurb and channel stones were set in the public streets, and 1.03 miles were set in new bustee roads. One bathing platform was constructed, and three were extended. Rs. 53,221 were spent on bustee improvements, including road and sewer construction and bathing platforms. Rs. 34,574 were spent on town improvements, including short pieces of new road, widening roads and lanes, and rounding-off corners.

Rs. 23,194 were spent on tank filling, including big tanks in Gas Street, Manicktola Street, and Ramkissen Dass' Lane.

Two Macfarlane's urinals were erected.

The following were the works of Suburban Improvement which have not been included in the above :—

Rs. 23,110 was spent on the construction of hackney carriage stands, and land acquisition for the same in the suburbs. Rs. 15,000 was contributed to the new cart-bridge over Tolly's Nullah. Rs. 3,788 was spent on the Matiobrooj Khal sluice. A large number of other improvements were carried out.

Good progress was made in the land acquisition for the new Chetla Road, estimated to cost Rs. 81,952.

The Goragatcha Incinerator was completed at a cost of Rs. 44,075. Rs. 7,699 was spent on a new night-soil cart depôt on the Budge-Budge Road, the result of which has been to remove a great nuisance. A disinfecter for the Health Department was imported at a cost of Rs. 2,572.

Vital Statistics of Calcutta.—In considering the vital statistics for Calcutta, it is always necessary to bear in mind the special circumstances of population. The Census shows that the population is essentially a floating one, and that emigration and immigration are constantly going on. The number of males is nearly double the number of females. The birth-rate is therefore low, and the population of the infantile inhabitants of Calcutta (*i.e.*, below five years) is small in comparison with other towns. The death-rate of Calcutta will, in consequence, compare favourably with that of other towns, where the population is more stationary, and it is only by examining the *age death-rate* that a true basis for comparison with other places is obtained.

On the other hand, a large proportion of the deaths occur among persons who have been brought into the town proper during their last illness. Out of 989 persons whose deaths were registered at Nimtollah Burning Ghat from 1st June to 7th August 1893, 201 or 20 per cent. were returned as residents of less than one year.

Birth registration shows continuous improvement. The number of births recorded was 12,688, being 18.6 per 1,000, which is the highest birth-rate recorded since the amalgamation. The improvement in the birth registration of the suburbs is noticeable, the following being the figures of the ratio per 1,000 for the four years since the amalgamation—16.1, 18.4, 19.6, and 21.2.

There were recorded 20,180 deaths in 1892, giving a ratio per 1,000 of 29.6. The following gives the death-rate for the past four years :—

Death-rate.

Year.	Town.	Suburbs.	Calcutta.	Year.	Town.	Suburbs.	Calcutta.
1889	25	36.6	28.7	1891	27.9	39.4	31.5
1890	26.5	37.1	29.8	1892	27.1	34.8	29.6

These figures indicate that there has been a distinct improvement in the health of suburban Calcutta during the year.

On pp. 123-4 of his report (p. 134 of abstract), the Health Officer has instituted an interesting comparison between the different wards in respect of birth-rate and death-rate. The birth-rate varies from 4.6 in Burrabazar and Waterloo Street wards, to 32.5 in Hastings. The death-rate varies from 13.3 in Waterloo Street to 44.1 in the fringe area of Burtollah, and 42.3 in fringe area of the Sukea's Street ward. This fringe area, lying between the Circular Road and the Canal, is low-lying,

overcrowded, and full of contaminated tanks. The ground level is too low to admit of drainage connections with the Circular Road main sewer or the storm-water sewer, and the whole area is very partially drained. The Health Officer has pointed out the need of filling up the worst tanks in this part as a means for checking cholera, and the Commissioners are sensible of the necessity.

It is noticeable that, in Watgunge and Alipore wards which have no underground drainage, the death-rate even now is lower than in most of the northern wards. The Health Officer attributes this result to the overcrowding in the northern wards, and the excessive strain that is thereby placed on the sewer system in these wards.

The rise of the death-rate from fever in the town proper is shown by the figures of recent years given in p. 124 (p. 135 of abstract).

Cholera.—The total number of cases was 2,019. In 1891 the number of cholera cases were specially large (2,955) on account of the occurrence of the Ardhodaya Jog. In the suburbs there were 762 deaths from cholera, being the lowest number in the last five years. This satisfactory diminution is evidently connected with the extension of the filtered water supply which was fully introduced in the latter part of 1891; and the operation of cause and effect in the case is demonstrated to proof by a comparison between the cholera figures for the suburbs and Howrah, where there is no filtered water supply. Hitherto the death ratio from cholera in the suburbs and in Howrah has closely corresponded; but during the past year, though the ratio was specially high in Howrah, it fell to its minimum in the suburbs. Moreover, the year 1892 was a bad year for cholera all over Bengal, the death ratio being the highest since 1876. The comparative immunity from the suburbs is the direct result of the policy of the Commissioners in extending the water supply, and is a result on which they may justifiably congratulate themselves. The mortality from cholera was highest in March and in April, and was associated in these months with the assembling of pilgrims on the occasion of the Mahabaroonnee Jog and with the Ramzan observance.

There were a few isolated cases of small-pox, the number of deaths from diarrhoea and dysentery has undergone steady decrease during the past four years.

The year 1892 may be described as a moderately healthy one.

Water supply.—Much discussion and some alarm was provoked in the past year by the appearance in the filtered water supply of a few specimens of unwelcome visitors in the shape of snakes, worms, and a species of delicate slender eel. It is satisfactory that the snake was of a perfectly harmless species, but the mode of its introduction, as also that of the eel, remains unaccounted for after careful investigation. The worms were of marine and estuarine species and came from the river. None of these organisms have been found during the present rainy season, and it seems probable that the cause of their introduction is not connected with any other cause likely to lead to contamination of the water supply. The Health Officer has reported fully on the subject on pp. 136–7 of his report.

On p. 125 of his report (p. 135 of abstract), the Health Officer refers to Mr. Baldwin Latham's recommendation to construct a new level outfall sewer (estimated at 13½ lakhs) to carry the sewage to salt lakes, and urges that an important matter of this kind "needs to be dealt with expeditiously." The project is not supported by their engineer, and the Commissioners are of opinion that the recommendation does not come within the region of practical politics at present.

The Health Officer calls attention to the wording of Section 315, which empowers the Commissioners to require owners to cleanse or fill up wells, tanks, &c., and the ambiguity in the section by which it is left uncertain whether or not the option to cleanse or fill up must be allowed to the owner, or whether it is for the Commissioners to prescribe his doing one or the other, without any alternative. In the opinion of the chairman (who under the section has the power of issuing notices, unless in any particular case the Commissioners deal with the case) the Health Officer's interpretation is correct. There is a difference of opinion on the point, however, among the Commissioners, many of whom take an opposite view which can only be authoritatively settled by legal decision.

The Health Officer has in forcible language drawn attention to the need of stricter building regulations for Calcutta. He maintains that masonry buildings are springing up everywhere on bustee lands without adequate provision for roadway; that the condition of these buildings is in consequence insanitary, because not only do they receive no ventilation, but they keep confined in a dangerous way the gases escaping from the adjoining sewers. He advocates that restrictions should be placed upon building in such cases until the owner of the land shall have made provision at his own cost of adequate roadway—a system which, he states, is insisted on in every other

country, and he recommends that a Building Act should be passed for Calcutta by the Local Legislature.

A very large majority of the Commissioners consider that, under the present law, there is ample power to regulate erection of proper buildings. A set of bye-laws was passed some years ago after careful consideration, but experience having shown their inapplicability to certain cases, the Commissioners have recently appointed a Committee to revise them, and they believe that, if proper bye-laws are framed, much of the complaint made in the Health Officer's report is likely to disappear. The Health Officer has referred to one particular case as to which it may be mentioned that, owing to exception being taken by the executive to the sanction granted by the Building Committee to construction of the building therein referred to, the Commissioners in meeting appointed a committee to consider the breadth of road required to be left before building should be sanctioned.

The majority of Commissioners are of opinion, therefore, that no sufficient grounds are put forward for the necessity of further legislation. The statement that the houses which are sometimes built on bustee lands are worse than the old bustees (which have been condemned by the Health Officer so frequently in well-remembered terms), is a statement which the Commissioners are not prepared to accept. It is indeed impossible to hold that the houses which have been built upon the site of *bustees* are far more insanitary than the *bustees* were. The brick-built houses are inhabited by a more respectable class of the people. Their habits are more cleanly. They are accustomed to a better mode of living. These things would in themselves make a vast difference between the *bustees* such as they were and the brick-built houses by which they have been replaced.

The cautious way in which the bye-laws have been worked have gone far to reconcile public feeling to them, and any hasty attempt at legislation must be deprecated by the bulk of the Commissioners as much in the interests of sanitary reform as out of deference for public opinion. The Commissioners are as eager for sanitary improvement as their Health Officer. But they are fettered by considerations which the Health Officer need not recognize. They have to take a practical view of the situation. They have to reconcile the interests of sanitation with the state of public opinion, and they feel from their past experience that they must proceed cautiously, and that a Building Act which would be resented by public opinion would not only prove a great hardship to the people, but would be practically inoperative.

The Commissioners in this connection would recall the words of Sir Ashley Eden in the Resolution of the Administration Report for 1876. Speaking of the remarks of their former Health Officer, Dr. Payne, he wrote:—"Mr. Eden is persuaded that "to make sanitation efficient in Calcutta, the people of the city must be led, and not "driven, into co-operation with the Sanitary Department. Dr. Payne should bear in "mind that one case in which native society is induced by conviction to adopt a "sanitary theory is worth hundreds of cases in which they are pressed into submitting "to reforms of the benefits of which they are not satisfied. The Sanitary Officer "must remember that the principles and theories which to him seem so obvious and "indisputable, have not even yet received practical acceptance in many countries in "a much more advanced condition of social progress than India. In some of the "finest cities in civilized Europe, with every appliance and convenience for sanitary "improvement available, there are streets, lanes, and houses whose description, if "faithfully given, would throw into the shade the vivid pictures of the filth of "Calcutta so graphically drawn by Dr. Payne."

The general question involved is one on which the most opposite opinions have been entertained among the Commissioners. Opinion is divided into two schools on much the same lines as it is divided on the same subject in London and other towns in Europe.

The one school—whose views are represented above, and they form the large majority of the Municipal Commissioners—holds that whatever land is required to be taken up for roads, should be acquired at public cost, and that to require the owner to give up land and prevent him from making the profit out of it, which he otherwise could make, amounts to unjustifiable confiscation. They point out that town property has been continually changing hands without any such disabilities attaching to the possession either existent or in prospect, that the ownership of town land is in many cases in the hands of very petty and numerous shareholders, and that it is impossible for them to enter into mutual arrangements that shall be equitable to all to give up lands for roadway. In short, it is contended that any attempt to get broad streets made in new localities otherwise than at the public cost would be spoliation.

The opposite school, on the other hand—which comprises a small minority of the Commissioners, including the Officiating Chairman—contend that the municipal income must for ever be inadequate to the burthen which the other party would impose upon it; that inasmuch as the value of a town property is enormously enhanced by the construction of a street with necessary drainage provision, it is not equitable that the ratepayer should bear the whole cost; that if no restrictions have hitherto been imposed and property has changed hands free from such restrictions, this result has been due to carelessness, and that, in view of the dangers to the public health from the present system which the Health Officer has pointed out, a change in that system is imperatively called for. It is pointed out that the value of land is increasing annually in Calcutta, largely owing to Municipal improvements, and that the longer the question is deferred, the more difficult of solution it will become. It is admitted that no legislation should be passed without the most careful preliminary inquiry so as to prevent injustice to individuals, but it is strongly urged, on the other hand, that, on the general principle that property has its duties as well as its rights, and that, in the case of property in an overcrowded city, interference is necessary for the common weal, the State should place such restrictions upon building, even at the cost of diminishing the value of town property to its immediate possessor, as may be essential for the public health.

ABSTRACT OF REPORT OF THE HEALTH OFFICER OF CALCUTTA FOR 1892.

(Dr. W. J. Simpson.)

Births.—The number of births recorded during the year 1892 is higher than that registered during the previous three years. There were 12,688 births, giving an annual ratio of 18·6, which is the highest birth-rate since the town and suburbs were amalgamated. The figures are as follows :—

Year.	Number of Births.	Birth Rate.
1889	12,317	18·0
1890	11,918	17·4
1891	12,477	18·3
1892	12,688	18·6

The increase is due to a steady improvement in the birth-rate of Suburban Calcutta. This is shown in the subjoined table :—

Year.	Urban Calcutta.		Suburban Calcutta.	
	Number.	Ratio.	Number.	Ratio.
1889	8,752	18·7	3,565	16·1
1890	7,948	17·0	3,970	18·4
1891	8,256	17·6	4,221	19·6
1892	8,123	17·4	4,565	21·2

The causes of this difference are probably of a complex nature, and any explanation in the absence of more accurate information must rather partake of general references to Suburban Calcutta, on the whole being more residential in its character than Urban Calcutta. The peculiarity of Calcutta, as regards its small number of residential females as compared with that of males, combined with the constant migratory habits of its population, does not permit of any useful comparison of its birth-rate with other towns.

Deaths.—The number of deaths in 1892 was lower than that of the previous two years. There were 20,180 deaths in 1892 against 21,577 in 1891, being a decrease of 1,337 deaths. The subjoined table gives the figures and ratios for the past four years :—

Year.	Number of Deaths.	Death Rate,
1889	19,564	26·7
1890	20,368	29·8
1891	21,157	31·5
1892	20,180	29·6

The decline in the death-rate during 1892 was mainly due to fewer deaths in the suburbs as compared with the previous year. There were in Urban Calcutta 359, and in Suburban Calcutta 978 fewer deaths. The following statement shows the numbers

of deaths in each of these divisions of the town with its death-rates for the past four years :—

YEAR.	Urban Calcutta.		Suburban Calcutta.	
	Number of Deaths.	Ratio.	Number of Deaths.	Ratio.
1889	11,682	25·0	7,882	36·6
1890	12,382	26·5	7,986	37·1
1891	13,033	27·9	8,484	39·4
1892	12,674	27·1	7,506	34·8

It will be observed that the death-rate in the suburbs for 1892 is the lowest since the amalgamation. It has been previously mentioned that the suburban birth-rate for 1892 was the highest recorded. These two facts, when taken together, indicate that the health of Suburban Calcutta has distinctly improved during the past year. As to Urban Calcutta a similar satisfactory account cannot be given. The death-rate for 1892 is slightly lower than for 1891, the ratios being for the respective years 27·1 as against 27·9, or 359 deaths fewer in 1892 than in 1891. But 1891 was an exceptional year. The *Ardhodaya Jog* which occurs only once every 27 years happened then, and was the immediate cause of a large number of deaths among the pilgrims who streamed into Calcutta on that occasion. If this influence therefore be considered and discounted, the public health of Urban Calcutta in 1892 was no improvement on that of 1891. The high mortality in Calcutta is mainly due to the great prevalence of fevers.

The relative death-rates according to nationality were Christians, 20·5; Hindoos, 29·5; Mahomedans, 30·0; other classes, 44·9.

The birth-rate and mortality varied greatly in the different wards. In the northern portion of the town, Jorabagan had a birth-rate of 8·9 and a death-rate equal to 29·0, while Burra Bazar had a birth-rate of only 4·6 and a death-rate of 26·5, a certain reduction having taken place in the death-rate of this ward in consequence of the construction of the new Harrison Road. In the southern portion of the town Waterloo Street ward, which is the European business quarter, had a birth-rate of 4·6, and a death-rate of 13·3. It is worthy of notice that Hastings is the only ward where the birth-rate exceeded the death rate. The highest ratio in any of the wards was in the added area of Burtollah, which recorded a birth-rate of 36·9 and a death-rate of 44·1. The added area bordering on the Circular Canal as a whole showed a high mortality. The district is low-lying, crowded with people, has a very large number of filthy tanks and is very unclean. The people also are more residential; they die here, whereas in many other wards they go home to die. Its cholera-rate and fever-rate were very high. The former was due mainly to its contaminated tanks, every one of which should be filled up as soon as possible. Cleansing tanks of this description is a mere waste of time and money with no sanitary effect whatever. A good deal of its fever was also due to the same cause, though some of it may fairly be attributed to the absence of drainage. No scheme of drainage, however, should be introduced until a Building Act, regulating the construction of buildings and the laying out of streets, is put into force. To introduce drainage in such a locality, without first constructing roads, is useless and dangerous. This locality in the amalgamated suburbs demands particular attention. If this added area be excluded, and the fever-rate of the other wards be examined, it will be seen that for the year Alipore with no drainage had a less fever-rate than any of the northern wards with all its underground drainage, and that the Watgunge ratio was also below that in most of the northern wards, though the former ward has no drainage. The difference even in the highest ratios was not so marked as it should be. The beneficial effect of underground drainage is marred by the crowding together of buildings and the narrowness of streets. With these unfavourable conditions it is impossible to lay down a system of drainage which shall work with efficiency and without danger. The dangerous element is this, that wherever a crowded area exists, the population being greater than the area can accommodate with safety, the resources of any drainage which may be laid down, having due regard to the area to be drained, are so heavily taxed by the waste products to be removed, that stagnation inevitably results, and injurious gases pass into the air with the well known disastrous consequences, whereas with wide and straight streets and a population proportionately diminished, sewerage and drainage would be effective in removing the poisonous products.

The deaths from fevers continued high, though there was a slight decrease when compared with the previous year. There were from this cause 7,618 deaths in 1892 against 7,851 in 1891, 6,792 in 1890 and 5,994 in 1889. The decrease in 1891 was chiefly in Suburban Calcutta; the figures for Urban Calcutta remained nearly the same. The rise of fevers in Urban Calcutta during recent years is seen from the following table:—

1882.	1883.	1884.	1885.	1886.	1887.	1888.	1889.	1890.	1891.	1892.
3,618	3,442	3,618	3,831	3,422	3,253	3,198	3,334	4,154	4,675	4,632

In previous reports the local insanitary conditions which engender fevers in Calcutta have been sufficiently dwelt on, and it is only necessary to state in this report that, combined with crowding together of huts and houses, one of the most important of these conditions is the unsatisfactory state of the underground drainage in Urban Calcutta, by which the soil and subsoil are being constantly polluted, and which, if permitted to go on unheeded, will, ultimately, under favouring climatic conditions, have a most disastrous effect on the public health of the city. It is over two years now since Mr. Baldwin Latham, a sanitary engineer of great experience, pointed out in a most lucid manner the radical defects which rendered the underground drainage of Calcutta dangerous to its inhabitants. An important matter of this kind needs to be dealt with expeditiously, and I would therefore again strongly recommend that action be taken on the basis of Mr. Baldwin Latham's report; for, the sooner the defects in the sewerage system are remedied the more speedy will danger from this cause be averted, and a reduced death-rate be attained so far as the latter is dependent on this cause. The chief remedy lies in the provision of a low level outfall sewer. This is a remedy which unfortunately involves a heavy expenditure, so that in the present financial position of the municipality the undertaking of such a work is one of great difficulty, and one which may well cause the Commissioners to hesitate before coming to an definite decision. On the other hand, the matter is so important that it is impossible not to urge that a beginning should be made. A very considerable time must necessarily elapse in preliminaries, as in the procuring of the necessary information and the preparation of plans and estimates, and, perhaps when these are ready, the finances will be in a firmer condition than they are at present, and the work can then be commenced. In Suburban Calcutta there is no drainage to carry off the increased quantity of waste water which has resulted from the introduction of the new water supply, and accordingly a portion of the fever mortality is due to the increased water-logging of the soil. The Commissioners have, however, thoroughly appreciated the evils likely to accrue from an absence of drainage in the suburbs, and have resolved to proceed with the surface drainage of that area as being the most important sanitary work required therein. A special establishment has been entertained, plans have been drawn out, and every preparation is being made to begin the work. The suburbs have undoubtedly derived an immense benefit from the new water supply, and there is every reason for hoping that a considerably further improvement in the public health will take place when the surface drainage is completed. The introduction of the contemplated surface drainage in conjunction with what already has been done, viz., destruction of the refuse by burning, and the introduction of a pure water supply, will form a sanitary epoch in the history of the suburbs. And the Commissioners are to be heartily congratulated on the great progress which these extensive undertakings represent, and the more so inasmuch as these improvements have all been conceived within the past five years since the amalgamation with the town.

In 1892 there were 2,019 cholera deaths against 2,955 in 1891. The following statement gives the number of cholera deaths for the two main divisions of the town during the past four years:—

Year.	Total.	Suburban.	Urban.
1889	2,315	1,236	1,079
1890	1,879	916	963
1891	2,955	1,402	1,553
1892	2,019	762	1,267

In both divisions the year 1891 had the largest number of deaths, which was shown in previous reports to be due mainly to the *Ardhodaya Jog* in the month of February. The low figure of 762 for Suburban Calcutta in 1892 may be considered to be largely the result of the water supply introduced in 1890. The influence of the newly introduced water supply is shown more clearly in the following table, where the deaths of each year for February are placed in a separate column :—

Years.	TOTAL CALCUTTA.			URBAN CALCUTTA.			SUBURBAN CALCUTTA.			REMARKS.
	Total.	Feb.	Remain- ing months.	Total.	Feb.	Remain- ing months.	Total.	Feb.	Remain- ing months.	
1888	3,121	293	2,828	1,734	182	1,552	1,387	111	1,276	* Opening of Halliday Street works on 12th March 1889, and extension of town supply into suburbs in September. Opening of Bhowanipore works in Suburbs in August 1891. Ardhodaya Jog.
1889	2,312	213	2,099	1,076	94	982	1,236	119	1,117*	
1890	1,379	313	1,466	963	217	746	916	96	820	
1891	2,955	1,156	1,799	1,553	523	1,030	1,402	633	769	
1892	2,019	125	1,894	1,257	85	1,172	762	40	722	

It will be seen that the number of deaths in February, for 1891, both in Urban and Suburban Calcutta, is extraordinarily large, and that for Suburban Calcutta the cholera mortality during the total remaining months of the year, when compared with the corresponding months in other years, shows a marked decline. The fall is quite irrespective of drainage, for there is no drainage in the suburbs.

In connection with the fall in the number of deaths from cholera in the suburbs, and the consequently small number of cholera deaths in 1892, it is worthy of note that Howrah recorded in 1892 not only the highest number of cholera deaths for the past decade, but for any year since 1873, when registration was first introduced into that town. This is a very important fact, and an equally important one is that Howrah hitherto has never suffered to the same extent as suburban Calcutta, the reason being that it has never been exposed to the same incessant infection. The suburbs of Calcutta contain the celebrated Kali's Temple to which pilgrims come at all seasons from all parts of India, and more especially of Bengal. On occasion, as in the instance of the *Ardhodaya Jog*, the pilgrims come in thousands, and at those times especially there is imminent danger to the inhabitants. Whether the pilgrims be few or many, cholera is seldom absent from Kalighat, and the infection very frequently spreads from this centre. The numerous tanks in the suburban area are thus liable to be more often contaminated than those on the Howrah side of the river, and the consequence has been that the suburbs have always been not only an endemic area, but also an epidemic area. The dark red belt of cholera which surrounded Calcutta and which marked the suburbs out on the map, as being peculiarly cholera-stricken, has suddenly disappeared. Can this sudden change be attributed to climatic influences? If so, Howrah should share in some degree in the improvement, for the climate of Howrah differs in no essential respects from that of suburban Calcutta. Except for municipal purposes, the two areas are practically parts of the same town, one being on the east of the river Hooghly, the other on the west. Their topographical conditions are alike, their inhabitants live in the same manner, bustee land predominates in both areas, and foul tanks are the characteristics of each. With such similar conditions, exposed to like climatic influences, they are excellent areas for comparison regarding cholera prevalence. Under these circumstances, climatic influences would be expected to show some uniformity in their results in both areas, and, as a matter of fact, this is the case. There is always a synchronicity between the cholera-rate of Howrah and that of suburban Calcutta. The same climatic conditions, which are favourable for the reproduction of the cholera germs in Calcutta, favour their reproduction in Howrah, and the climatic conditions which are hostile in the one, are hostile in the other. Thus it happens that, when the cholera ratio rises in one area, it also rises in the other; and when it falls in one it falls in the other. Each is the cholera barometer or index of the other: the only difference noticeable has been that hitherto Howrah has always had the advantage of fewer cholera deaths per 1,000 of the population, and consequently always a lower ratio than the suburbs. The cause of this has been already explained. This rising and falling together has, however, undergone a change, as seen by the following table :—

Years.	No. of Deaths in Howrah.	No. of Deaths in Suburbs.	Years.	No. of Deaths in Howrah.	No. of Deaths in Suburbs.
1888 - - -	598	1,387	1891 - - -	490	1,500
1889 - - -	488	1,236	1892 - - -	771	762
1890 - - -	364	960			

During the years 1889 and 1890, there was in both areas a steady decline marked more in 1890 in the suburbs than in any previous period. Then in 1891 there was a rise in both areas. The cause of the great rise in the suburbs has already been shown to be due to the Ardhodaya Jog. Lastly, in 1892, the Howrah ratio rises still further, and to such an extent as to record one of the highest death-rates from cholera from which it has suffered since registration began. But not so the suburban cholera ratio, which instead of rising and exhibiting one of the highest ratios recorded, has taken exactly the opposite course, and declined until the ratio is one of the lowest that has been noted. Further, the population of the suburbs is twice that of Howrah, and yet the number of cholera deaths in Howrah for 1892 is more than the number of deaths for the suburbs. Such a relationship has never been known to exist before. If the suburbs had responded in a similar manner as previously and as had hitherto been usual, then with 771 deaths in Howrah there should have been over 2,000 in the suburbs, whereas there were only 762. After having reached in 1890 a low figure, the Howrah cholera ratios of 1891 and 1892 have been following their ordinary course in ascending, but the suburban ratio has broken away from its ordinary course, and, instead of ascending in 1892, has suddenly fallen. Clearly climatic influences have not raised the Howrah ratio to the highest which has been for many years past, and simultaneously depressed the suburban ratio to the lowest on record. Evidently, something unusual has occurred to put a strong check so far as the suburbs is concerned, on the natural tendencies of climatic influences which, in relation to cholera endemicity, have hitherto worked together on Howrah and the suburbs, and which has at the same time disturbed the harmonious rhythm which existed formerly as regards cholera prevalence in these two areas. Climate being thus eliminated, to account for the reduction in the suburbs, other known factors have to be considered which may have had the effect. Of these it is not the introduction of drainage, because fortunately for the sake of comparison neither area has been drained. There can, therefore, be no discussion concerning the influence which the drainage has had in the reduction of cholera similar to that which took place, and confused the issues when an equally marked reduction was recorded in the town of Calcutta in 1870 on the introduction of the water supply. In Howrah and the suburbs of Calcutta, the fact of there being no drainage in either simplifies the question. The only great difference now existing between the two areas is the presence of an agent in the suburbs, which, wherever it has been introduced, has always been followed by a precisely similar effect. That agent is a pure water supply. Many of the inhabitants of Howrah send across the river to Calcutta for their water supply, but a large portion of the inhabitants still depend on their tanks for their drinking water. In 1892 the suburbs of Calcutta had a fair supply of good pure water, while Howrah had a tank supply, some of which was drawn from the river from a source not above suspicion. This is the difference; and the circumstance adds one more fact to the constantly accumulating evidence as to the important role which contaminated water plays in the spread and prevalence of cholera. The water supply of the suburbs was not introduced in 1892, but in the latter part of 1891. Its effect was immediate over the whole area of supply, and there was, as has been shown by the former figures, a marked reduction in the monthly deaths. There had been a decline even previous to this, because a large portion of the suburbs had the town supply extended to it in the latter part of 1889, though the Bhowanipore pumping station was not completed until August 1891. In 1891, notwithstanding the extraordinary gathering at Kalighat, the deaths from cholera in all the months except February were very much reduced, and in 1892, when the ordinary conditions prevailed, the deaths declined to an extent which they had never reached before; while in Howrah, whose cholera ratios have always ascended and descended simultaneously with the suburbs, the ratio was exactly reversed, and the deaths rose above all previous records. In this connection it is also to be noted that Howrah only followed the general ratio for Bengal which was the highest since 1876, no fewer than 259,398 deaths from cholera being recorded. The extraordinary fall in the suburbs is therefore of peculiar significance.

The reduction would doubtless be more conspicuous were the polluted tanks of the suburbs not so numerous. In a previous report one of the chief causes of the cholera prevalence among the pilgrims in February 1891, was attributed to the use of contaminated water. In view of the constantly accumulating evidence of polluted water and its influence on the endemicity of cholera in Calcutta, it is of paramount importance that no relaxation should be permitted in the work of filling tanks. It has been recently contended that the owner of a tank injurious to health is not obliged to fill up that tank when called upon to do so by the commissioners, but that the clause in the Act gives him the option of cleansing or filling up. The section 315 is as follows :—

“ When any well, tank, or marshy ground, or any waste or stagnant water, whether within any private enclosure or not, appears to the Commissioners to be injurious to health or to be offensive to the neighbourhood, the Commissioners may require, by notice in writing, the owner of the same to cleanse or fill up such well, tank, or marshy ground with suitable material, or to drain off or remove such stagnant water; and if he shall refuse or neglect to comply with such requisition during one month from the service thereof, the Commissioners may enter into the said premises, and do all necessary acts for all or any of the purposes aforesaid as they shall think fit; and the expenses thereby incurred shall be paid by the owner, and until so paid the Commissioners may retain possession of the land, or tank, or the site of such tank, and utilize the same for public purposes.”

The option of cleansing or filling up has hitherto always been construed to belong to the commissioners, and I know that this was the intention of the framers of the clause. This point therefore requires to be settled definitely, because if the option lies with the owner, the work of filling up tanks for all practical purposes comes to an end. And as the abolition of wells and tanks in Calcutta is a sanitary measure of the first importance, powers to enforce this should be immediately obtained. Owing to the peculiar treatment to which the tanks of Calcutta are subjected, and the impossibility of preventing their pollution in crowded localities or in bustees, any relaxation in the course formerly adopted of insisting on their being filled up, can only end in injury to the public health. As to the wells it may be safely said that there is not one of them in the town fit for domestic use; they are a continual source of danger to those who use them, and like the tanks require to be systematically filled up without exception.

Small-pox. The year 1892 was a non-epidemic year, and the few isolated cases of small-pox which occurred in the town and amalgamated area were mostly imported cases. The deaths from the disease numbered only 21, against 18 in 1891.

Bowel complaints. There were 2,364 deaths from diarrhoea and dysentery in 1892 against 2,716 in 1891. During the past two years there has been a marked reduction in the number of deaths in Suburban Calcutta, as is shown by the following figures :—

	1839.	1890.	1891.	1892.
	1,425	1,448	1,283	1,086

A portion of this diminution may fairly be attributed to the new water-supply now used by the inhabitants generally for drinking purposes, in place of the foul water from the tanks which abound in the suburban area.

Other causes. The total number of deaths from all other causes was 8,158 against 7,977 in 1891, being slightly higher than the average of the preceding three years. The increase was mainly due to a larger number of deaths occurring in Urban Calcutta.

SPECIAL SANITARY MATTERS.

There are some sanitary matters which deserve special attention and call for particular remark. Among these are the water supply and its infection with snakes, the necessity for a Building Act, the importance of abating the nuisance at Goragatcha trenching ground, the need of ambulances, the impossibility of proper scavenging of the town, without restriction of the hours at which the inhabitants shall be permitted to throw refuse into the streets, the erection of the Goragatcha incinerator, and the purchase of a disinfecter.

Water supply.—Considerable anxiety arose in the minds of the inhabitants of Calcutta during the second quarter of 1892 from the presence of snakes, worms, and eels in the water supply of the City. Reference was made to the late Mr. Wood-Mason,

then Curator of the India Museum, who pronounced the snake to be a typhlops and perfectly harmless. It is common enough in Calcutta, but this was its first appearance in the water supply. Some 20 or 30 snakes came from the filtered water taps during the quarter. A curious coincidence was the appearance about the same time of marine and estuarine worms in the unfiltered water supply. No difficulty was experienced in proving that the worms in the unfiltered water came from the river. The most diligent search, however, as to the manner in which the snakes gained an entrance into the filtered water was unsuccessful. They did not come from the river near Pultah, for they were not found in the filter beds; and Barrackpore, which is supplied with the Calcutta water immediately after filtration, was free of them. The several reservoirs in the town were examined, but they furnished no satisfactory solution of the problem as to the presence of the snakes in the pipes. In the compound of the Tallah pumping station similar snakes were found under a heap of rubbish, but some distance from the reservoir. A single specimen of the typhlops was found adhering to a ledge in the Wellington Square reservoir when it was opened and examined; but how it got into the reservoir is not known. Another still more curious coincidence was the presence of specimens of delicate slender eels in the filtered water supply from the second week of June, *i.e.*, soon after the appearance of the snakes from house-taps had been noted. The manner in which the eels gained access to the water pipes has hitherto remained a mystery. Two explanations suggested themselves at the time; the first was the possibility of a nest of snakes having gained access to the pipes in the process of pipe-laying, specially in the new Harrison Road and in the suburban area; the second was the liability of suction into the mains when the pressure was taken off for the night. The chance of contamination of the Calcutta filtered water supply is much more than a possibility, and likely to arise with an intermittent system. The snakes and eels in the water supply may not have been in themselves very important; but if snakes and eels were able to gain an entrance from the outside, no security can be felt against the occurrence at any time of a sudden contamination of the water by something much more injurious to the public health. It is satisfactory, however, to be able to report that the cleansing of the reservoirs and structural alteration remedying every defect found in them, whereby the snakes might possibly have reached the reservoirs, were followed by the disappearance of the snakes during the rest of the year. With the object of improving the water supply a very important work was begun this year at Pulta, in the shape of two new settling tanks. When these are completed the water pumped from the river will have a longer time to settle before being decanted on to the filters, which by the present arrangements are put to an undue strain especially in the rainy season, when at times the water supply is not so pure as it should be; so much is this the case that it is advisable for the public to boil the water during the rains.

A Building Act required for Calcutta.—Again, it is necessary to draw attention to the law as it stands regarding streets and buildings. That in force is not merely a defective law, but a radically bad one, for under its sanction unhealthy houses are being built, whilst areas in the town are being created which, as they grow, can only breed pestilence. In 1889 I gave a very full report on this subject, and the Bengal Government resolution on that report endorsed the opinion that the ventilation of the City by proper streets and squares, and the enforcement of proper building regulations were the most important sanitary measures which remained for the Municipal Commissioners to undertake; and in paragraph 16 of the same resolution the Lieutenant-Governor expressed his hope that the suggestion of the Health Officer for the appointment of a suitable committee to investigate and report upon the subject with the object in view of the framing of a Building Act would receive very early attention. Three years having elapsed without any action being taken in this direction, it becomes a duty to urge the early adoption of a measure of such vital importance. The deterioration in health conditions of certain localities during the past few years is very marked, and nothing can stop this deterioration, while the present law remains in force. When a house may be built anywhere without reference to efficient ventilation, proper drainage, or surroundings, when it may be built in any lane or passage irrespective of the width of that lane or passage, and when it may be built in such a manner as to permit it to obstruct the light and ventilation of the neighbouring houses so long as it is 4 feet away from them, no long time is necessary under this regime to create plague spots in different parts of the town. Such a process is going on continuously now, and while that process is allowed to continue, the money spent on the new Harrison Road and on the lanes which are constructed through bustees will have but a poor return, because the destruction of insanitary areas which is effected

by new roads and lanes can never even keep pace with the progressive creation of areas much worse in type. A Calcutta bustee, as it used to be, even with its drawbacks, is infinitely preferable to what is now springing up in its stead. At one time a landlord let the whole of his land for bustee purposes, and one-storied huts as a rule were built on every available space. The huts were built irregularly and according to the requirements of the hut-owner. The spaces between the huts served generally as passages, but occasionally the owners left sufficient space for the purposes of scavenging and cleansing the bustee. Drainage and ventilation were left to themselves, and as always happens when too large a population is crowded on too limited a space without reference to sanitary conditions, these bustees became very unhealthy and the source of epidemics. Bustee improvements accordingly became an important factor in the sanitation of Calcutta. At an enormous cost narrow lanes have been put through a number of the largest and drainage laid down. While, however, some advance has been made in this direction, a new development has taken place. The land of bustees and of vacant spaces is being sold in small plots, and each owner of his plot is building a brick building upon it. The outcome of this system is that, instead of bustees consisting of huts, bustees consisting of brick buildings are being erected. Now, as formerly, no one thinks of roads or streets. Every piece of land purchased is bought to be covered with a building. The objections against a bustee crowded with huts, regardless of the slightest attempt at sanitation, are infinitely greater against a bustee of brick buildings. In the majority of the former the huts were only one story in height, they had a large courtyard open to the sky, they were built of bamboo with mud-plastered walls, and the work was of such a kind that air could get into the rooms from creeks and corners everywhere. The sun had access to the courtyard and its powerful rays lessened, or even prevented to a great extent putrefactive processes set up by the needs and dirty habits of the inmates, and thus largely protected them from the results of their own ignorance by which every law of health is violated. But the bustees and areas of land covered with brick buildings on the new plan, or perhaps more accurately the plan copied from Jorabagan, will not have these advantages. The houses are at least two stories high, many of them have no courtyard, and those that possess one, have it contracted to the smallest limits. The influence of the sun is diminished, and the ventilation is reduced. The houses, shut in on every side from the perfusion of the wind, become veritable hot-beds of disease, and will inevitably get worse. The effect of a pure water supply in these districts can only be palliative. It is doubtful whether such drainage as is possible is of any real and lasting service. As I have stated in former reports, no proper drainage can be introduced into such localities. Sanitary science knows of no method by which areas of this description can be rendered healthy. All that can be done is to pull the houses down and begin on new lines. This being so, it may with reason be asked why such a system is permitted to continue, and evils perpetuated which can only end in a calamity. Water supply and drainage, however good in themselves, are not the panacea for every disorder to which the public health is subject, nor will they prevent diseases due to impure air, or the absence of the purifying effect of the sun. Pure air can only be obtained in Calcutta by open spaces, wide and regular streets, and efficiently ventilated buildings. Under these conditions drainage and cleansing can be effective and beneficial. But under the opposite conditions the forces, favouring the generation of disease, are stronger than those directed to their prevention. Time and season are the only factors wanting to ensure disaster. Nothing but a Building Act on comprehensive lines can deal with this important problem. With a good Building Act Calcutta would have the chance of ultimately becoming a healthy city. The process would be slow, but the progress would be sure. A very large portion of the city is still in the condition of bustee land, and accordingly it is quite easy to prevent the sale of this land or other kind of land for building plots until proper streets are laid down by the owner. This system is only that which is insisted on in every other country. *Roads with a minimum width of 40 feet are absolutely essential to ensure a healthy condition of the houses abutting thereon.*

VACCINATION.

The total number vaccinated during the year 1892 amounted to 14,050. Of these, 12,281 were cases of primary vaccination and 1,769 of re-vaccination. The corresponding figures of the previous year were 10,875 and 2,906, respectively. This shows an increase of 1,406 in primary vaccination, and a decrease of 1,137 in re-vaccination. The decrease in re-vaccination was due to the absence of small-pox

during the greater part of the year. Of the 12,281 cases of primary vaccination 11,332 or 92·27 per cent. were successful, and 358 or 2·91 per cent. were unsuccessful, and in 591 or 4·81 per cent. the result was not ascertained. In primary cases the rate of success calculated on the ascertained cases was 96·93. Of the 1,769 cases of re-vaccination, 454 or 27·66 per cent. were successful and 1,241 or 70·15 per cent. were unsuccessful, and in 74 or 4·18 per cent. the result was not ascertained. The rate of success on ascertained cases in re-vaccination was 26·80. The rates of success on ascertained cases in 1891 were 92·87 and 27·31, respectively. Of the total number vaccinated during the year, 7,529 were males and 6,521 females. According to nationality, 542 were Christians, 9,471 Hindoos, 3,960 Mahomedans, and 77 other classes; and 4,702 were under 1 year of age, 7,383 were 1 year and under 6 years, and 1,965 were 6 years and upwards.

Vaccination is carried on in Calcutta under the provisions of the Compulsory Vaccination Act. The Registrars of births issue notices to parents or guardians of children at the time of registration to have the children vaccinated within one year. When a child is successfully vaccinated, a certificate to that effect is given to its parents, and the duplicate of it is sent to the Ward Register, who thereupon makes an entry in his birth register under the column "vaccination" to show that the child has been vaccinated. The Registrars submit to the Health Officer monthly statements of persons of whose children they do not receive certificates of successful vaccination within one year of birth. By such monthly statements they submitted during 1892 the names of 10,642 persons who failed to produce the statutory certificates of having had their children vaccinated. All these cases were inquired into by the vaccination department with the result that 5,929 were traced and vaccinated, 1,505 were found to have left town or changed abodes, 796 were not found at the addresses given, 873 had died, 1,288 were ill, had small-pox, and 247 were prosecuted and vaccinated by order of magistrates.

Under the powers conferred on the vaccinators by the amended Act, house-to-house inquiry for unprotected children was daily made by the male and female vaccinators in the town and amalgamated areas, and where children over one year were found, notices were issued by the department direct to parents or guardians to have them vaccinated within 15 days. In this way nearly 1,600 notices were issued during the year 1892. Most of the people served with notice got their children vaccinated, but 169 had to be prosecuted. In certain localities and among certain classes, such as the up-country Marwaries of Burra Bazar and Jorabagan, great difficulty was experienced in obtaining the names of parents, and hence these could not be adequately dealt with by law. Vaccination is making slow progress amongst these classes. Besides the above, 212 persons were prosecuted for neglect to bring vaccinated children for inspection; so that the total number of prosecutions under all heads amounted to 618 during 1892 against 543 during the preceding year. Vaccination is systematically carried on in all sections of the town and amalgamated areas. But the degree of protection in each ward varies with the character of its population. The wards inhabited by Europeans and resident Bengalees are generally better protected than those inhabited by up-country people. The Vaccination Act enables the vaccinators to push on vaccination amongst the lower classes of up-country men, but the upper classes are very difficult to deal with, and vaccination is making very slow progress amongst them.

In Calcutta both the humanized and animal virus was kept up by regular transmission and used all the year round. The animal virus was replenished in March last by inoculating a calf with small-pox virus. The vaccine from this calf was transferred to a second calf, and from this calf to children. The lymph from these children was used in vaccinating calves as well as other children, and the result was great improvement in the rate of success with both animal and humanized virus.

ABSTRACT OF REPORT OF THE MADRAS MUNICIPALITY FOR 1892-3.

(*Lieutenant-Colonel G. M. J. Moore, President.*)

Drainage.—Black Town Drainage.—The following works have been carried out :—All the cesspools at places where the sewer in Popham's Broadway overflows into the old main drain were re-constructed, and the level of overflow raised in order to prevent frequent overflows occurring, but it has not yet been found possible to prevent sewage from entering into old main drain, though the quantity has been considerably reduced.

Constructing a cesspool at the junction of Annah Pillay Street and Adiyappa Naick Street.

Cutting off sewage at Monegar Choultry Slaughter-house from entering old main drain and connecting with No. 2 sewer.

Other Drains.—The following works were completed during the year :—

Constructing a covered drain from Egmore paddy fields to Pantheon Road.

Do. 9" cross drains in Adam Sahib Street, northern section, and a cesspool at the junction of Thoppay Moodelly Street, and Cemetery Road.

Laying 9" stoneware pipes in Peddoo Naick's Lane.

Constructing 12" and 15" drains on south side of Andiappa Moodelly Street.

Do. 12" drain on the north side of Venkatakristnen Street.

Do. 6" masonry drain in Dancing Girls' Street.

Do. 6" and 9" masonry drains in Bala Aroonachella Chetty Street, 1st division.

Do. a 6" tile drain in Adam Sahib Street.

Do. tile drains in Pathala Vigneswarer Covil Street.

The work in connexion with 6" tiled drain in Thotticalay Comarappa Moodelly Street will be completed early next year.

The work of extending the outfall pipe 3,300 feet has been postponed pending further consideration.

Water-Supply.—Mr. E. Cousin's Report referred to in last year's Administration Report has not yet been received.

A plan of the Red Hills Channel showing position of demarcation stones has been furnished by the Revenue Survey Office. Private connections have been allowed from 1st November 1892, having been disallowed for the previous 15 months.

During the year under report, 2,530 yards of pipes were laid, and 9 fountains, 6 valves, 12 stop-cocks, and 2 hydrants were fixed within the municipal limits.

On the 1st April 1892 the level of the Red Hills Lake stood at 37.31 and at 38.85 on the 31st March 1893. On the 4th of May the level of the lake at Red Hills fell to 35.63 when pumping was commenced, and was continued until the 28th August.

The quantity of water supplied to the city during 1892-93 was 326,856,762 cubic feet, as compared with 327,888,049 cubic feet in the previous year.

During the year 1,147 new services were laid by licensed plumbers, and 972 existing services were extended.

The rate of water supplied for non-domestic purposes has been four annas per 1,000 gallons throughout the year.

Conservancy. No change was made in the system. Carts, bullocks, and drivers were supplied by the same contractor, and labour was supplied and paid for departmentally, as in the two previous years. The President's proposal, that the commissioners should take the carts into their own hands and thereby effect a considerable saving, which was recommended by the Scavenging Cess Committee and accepted by the Commissioners as a part of the Committee's report, was brought before a general meeting, and it was proposed that a loan of Rs. 50,000 be raised for the purchase of conservancy carts. This was lost after a Committee had reported against it.

During the year 1892-93 the total number of cases vaccinated was 24,858 against 26,493 in 1891-2, showing a decrease of 1,635 cases. In comparing the work, if the vaccine operations done by the medical subordinates in the Penitentiary in 1891-92 be excluded from the total, then the number of cases operated on during the year under review shows a decrease of only 244 cases. The decrease was due to fewer children being born, and to the fact that many children brought to depôts for inspection were found unfit to be vaccinated. Vaccination was postponed for this reason in 868 cases. Out of 24,858 cases, 24,299 were successful, 204 unsuccessful, and 355 unknown. The unsuccessful and unknown results were less than those of 1891-92 by 379 and 551 respectively, and this was due to the weekly inspection of the vaccine operations performed among the convicts in the jail and the verification of results of the Natal emigrant coolies.

The following is a comparative statement of results of 1891-92 and 1892-93.

Year.	Total vaccinated.	Compared with the preceding Year.		Successfully vaccinated.	Percentage of success, excluding unknown.
		Increase.	Decrease.		
1891-92	26,493	—	—	25,004	97.72
1892-93	24,858	—	1,635	24,299	99.16

The percentage of primary and re-vaccination successful cases, excluding the unknown from the total, was 99.16 against 97.72 in 1891-92, showing an increase of 1.44 per cent. The tri-weekly system of vaccination introduced from the year 1889-90 in the several vaccine depôts compares favourably with that of the previous years when vaccination was carried on daily. Though there was a decrease in the number of operations performed during the year, yet there was an increase in the percentage of success of 1.44. There are eight vaccine depôts where vaccination was carried on tri-weekly and free of charge.

Out of 24,858 cases vaccinated 14,215 were males and 10,643 females, being 980 Europeans, East Indians and Native Christians, 1,651 Mahomedans, 2,223 Hindus, and 4 of other castes.

Out of 24,858 cases 21,421 were primary and 3,437 re-vaccinations. Of the 21,421 primary vaccinations 21,114, or a percentage of 99.57, were successful, against 99.45 in 1891-92. The percentage of success in primary vaccination was naturally higher than in re-vaccinations, though in the latter it was unusually high (96.57).

The accompanying statement will show the number of cases vaccinated during the past three years under different ages. Out of 24,858 cases 13,849 were infants under one year, showing a decrease of 2,054 cases when compared with the previous year, because there was a corresponding decrease of live-births registered from 18,336 in 1891-92 to 16,789 in 1892-93. There were 4,841 cases above one and under six years and 6,168 cases above six years, showing an increase of 159 and 260 respectively over those of 1891-92.

	Total Number Vaccinated.			Ratio.		
	1890-91.	1891-92.	1892-93.	1890-91.	1891-92.	1892-93.
Under one year	15,709	15,903	13,849	63.4	60.0	55.7
Above one and under six years	5,252	4,682	4,841	21.2	17.7	19.5
Above six years	3,807	5,908	6,168	15.4	22.3	24.8
Total	24,768	26,493	24,858	100.0	100.0	100.0

The number of births registered during the year 1892-93 was 17,249. Of these, 460 were still-born and 16,789 were born alive. There were 4,921 deaths under one year from various causes, exclusive of still-births. If these be deducted from the total births registered, it will be seen that the number of infants operated on exceeds the number of live children. All infants vaccinated were not born in Madras, but some of them were born in the moussil and subsequently brought to Madras. If the number

of children that died under one year, but were vaccinated prior to their death, be taken into account, then the number vaccinated and the live-births would be almost equal.

Out of 13,849 infants vaccinated under one year of age, 10,191 are reported to have been born in Madras and 3,658 cases to have been born beyond the Municipal limits and brought to Madras a few months after delivery, their parents being permanent residents; and it is customary among Hindus for mothers to be sent to their mothers' houses up-country for confinement. There is nothing to show how many infants born in Madras were taken after delivery to their native places before the age of six months.

For every 100 of the population, according to the Census of 1891, 5.49 were vaccinated during the year. The proportion of Hindus is especially large, and 6.19 per cent. of this class resorted to vaccination against 2.46 among Europeans, East Indians, and Native Christians, 3.10 among Mahomedans, and .67 among other castes.

During the year 21 deaths from small-pox occurred against 24 in the previous year, showing a slight fall in the mortality. Of the 21 deaths, 4 occurred in hospitals and dispensaries and 17 in private houses in the city. The disease was not confined to any particular locality. Two deaths occurred among infants under six months, 6 above six months and under one year, 11 over one and under 12 years, and 2 above 12 years. Immediate steps were always taken in vaccinating the unprotected children in the neighbourhood where deaths from small-pox occurred, and in disinfecting the houses in which the disease appeared. Re-vaccination of adults living in the infected houses was also encouraged. It is pleasing to note that no deaths from small-pox occurred among the fishermen during the year. The parents are now alive to the benefits of vaccination and the enforcement of the Act if they omit to obtain the vaccination of their children at the depôts on receipt of notices. They resort to the depôt to get their unprotected children vaccinated, and the vaccinators have free access to them when they visit their huts, whereas three years ago they could only deal with them with the help of the police, and vaccinate the children at their own huts.

Out of 17 deaths from small-pox that occurred in private houses, 8 were imported cases, and in 9 the disease was contracted from them. As small-pox has a long period of incubation, eruptions appear after arrival in the town among the unprotected people who come up to Madras after contracting the disease in the moussil, and when attempts are made to suppress the disease, fresh cases occur in some other Division. It would be a great safeguard if provision were made in the byelaws for compulsory vaccination of infants under six months and re-vaccination after puberty in the case of persons who are exposed to infection through residence in a house infected with small-pox.

During the year, after a successful trial of some glycerine vaccine prepared by, and obtained from, Dr. Calmette of Saigon in Cochin China, and some experiments by the Inspector of Vaccination, the Health Officer and the Deputy Inspector of Vaccination, the Saigon method of preserving lymph with glycerine was introduced in the Municipality, principally for the supply of the districts where calf-to-arm vaccination is impracticable. The process is as follows:—A calf is inoculated by scarifications of from 2 to 3 inches in length. The pulp is taken and rubbed up with glycerine in a glass mortar, about equal parts being used. The glycerine extract thus obtained is stored in glass tubes of much larger calibre than the capillary tubes, which have previously been sterilised. These tubes are closed with sealing-wax, as it was found that the temperature required to fuze them was apt to destroy the vaccine. The tubes are wrapped up in paper and packed in pieces of hollow cane, and the ends of the cane are closed up, so that the vaccine is fairly protected from light and heat. There is now a large demand for this vaccine from the moussil and it is distributed by post. Good reports of its efficacy have been received from district officers. In trials made in Madras with puncture only, the insertion percentage of success was 100 with vaccine that had been preserved for 10 days. Towards the end of the month it was found to begin to deteriorate, though still fairly successful. As a matter of fact, 10 days is ample for transmission to any part of the Presidency. One advantage of this preparation over lanoline paste is that it does not require scarification, which the natives strongly object to. From July 1892 to March 1893, 225 tubes were sent to different parts of India, Burma, and Ceylon. Each tube contains sufficient for 50 insertions.

Vital
statistics.

Births.—The births registered during the year 1892 numbered 16,659, exclusive of still-births, being 1,402 fewer than the year before, which was exceptionally high, and were in the proportion of 36.8 to 1,000 persons living. The decrease may be

attributed to the high price of food and the prevalence of epidemic disease in 1891, both of which seriously affect the health and vigour of the population of reproductive ages. One disturbing influence was the cholera epidemic of 1891, another influenza, which has been found to have a considerable effect upon birth-rates in Europe. Though lower than that of the two preceding years, the birth-rate of 36·8 compares favourably with that of London (1892, 30·8), and is fully double the registered rates of Calcutta and Bombay. The number of still-births was 405 against 489 in the preceding year, being 2·37 still-births to 100 survivals. Of these 224 were males and 181 females, the proportion being 123 to 100. The proportion of still-births to survivals shown in the Reports of the Government Lying-in Hospital for 10 years was 9·5 to 100. Making allowances for cases brought to the hospital, either grossly neglected or maltreated, with scarcely a chance of recovery, and taking it into account that the midwifery practice and general conditions outside are, for the most part, as bad as those inside are good, one is forced to the conclusion that the number of still-births actually occurring must be at least treble the number registered, and that the corpses of a large number are probably disposed of in any convenient piece of ground.

The Hindus were as usual the most prolific race, their birth ratio being 37·1; the Mahomedans come second with 35·8, and the Christians third with 35·5. The number of males born alive to every 100 females was 105·3. It is noticeable that among the Christians there was a slight excess of female over male births.

Mortality.—The deaths registered during the year numbered 20,847 against 23,808 in 1891, being in the proportion of 46 per 1,000 against 52·6 in 1891, the mean of the decade being 37·4. The comparative death-rates of the different castes were Hindus 47·2, Mahomedans 45·1, Christians 36·7, and others 13·4. Although the death-rate for the year under review is lower than that of the previous year under every class except fevers, and in every division except the second, nevertheless it is still exceptionally high. Prolonged want, due to the continued high price of food, was the principal predisposing cause of the high mortality among the masses, apart from the general insanitary condition of their surroundings, which was certainly not worse than usual. The principal foods of the poor in Madras are rice and ragi. Of the former on an average 9·2 seers were sold per rupee against 10·5 in 1891, and a normal of 13·8, the purchasing power of the rupee being equivalent to about as. 10, pies 8 in an ordinary year, and the price of labour remaining unchanged.

Mortality from different Diseases.—A comparison of the relative mortality from different diseases in 1891 and 1892 shows that the deaths registered under small-pox, dysentery and diarrhoea, cholera, and other causes were fewer in the year under review, and those under measles and fevers were more numerous. At the same time they were above the decennial average under every head except small-pox.

Statement of Mortality from the Prevalent Diseases in 1892 contrasted with that of 1891.

Years.	Small-pox.	Measles.	Fevers.	Dysentery and Diarrhoea.	Cholera.	Total.	Other Causes.	General Total.	Ratio per 1,000.
1891	66	372	6,731	4,573	1,916	13,658	10,150	23,808	52·6
1892	27	374	6,889	3,958	611	11,859	8,988	20,847	46·0
Average of 10 previous years.	664·1	284·6	4,133·0	2,311·0	592·6	8,485·3	8,466·4	16,951·7	37·4

Small-pox.—The total deaths from small-pox numbered 27, or 0·05 per 1,000 of the population, against 66, or 0·1 in the preceding year. A considerable proportion of the cases were among non-residents who came to Madras during the incubation period, as shown under the heading "Vaccination."

Cholera.—During nearly the whole year sporadic cases occurred in different parts of the city, but only twice, namely in May and August, did the disease assume epidemic proportions. The outbreak of 1891 continued during the early part of 1892 till about the middle of February, when it almost entirely disappeared. On April 24th 0·69" of rain fell, the first rainfall in the year except two very light showers in January, and on the 27th 14 cases of cholera were reported, of which 8 proved fatal. The first cases occurred in the 7th Division. The town smelt very badly the morning after the

rain, which was just sufficient to soak the dry filth, and it may be to reanimate the cholera germs, which had remained quiescent during the drought since the previous outbreak, and arouse them to a state of activity. It may also be that the rain sinking into the ground displaced a certain amount of the ground air which ascended into the houses laden with moisture as a disease-bearing myasma. This outbreak reached its height in the first week in May, when 142 deaths from cholera were registered. During the last week of April the Mahomedans were feasting after their long fast during the Ramzan, and a considerable number of Hindus went to a feast at Conjeeveram. No actual connexion was traced between the Conjeeveram feast and the Madras outbreak, though cases of cholera were occurring at the time all over the Conjeeveram taluq. Apart from the question of the carriage of infection these festivals appear to predispose the persons attending them to attacks of cholera.

The disease continued in a sporadic form till the beginning of August, when the Mahomedans kept the Mohurram in Madras, and a large number of low caste Hindus went to the Periapalliam festival. Then it increased to epidemic proportions, though not to such an extent as in the preceding year, though the dates of the increase closely coincide. This increase was apparently unconnected with the rainfall as showers fell every week during June, July, August, and September, keeping the ground constantly moist and cool. The outbreak reached its maximum in the week ending 2nd September, when 43 deaths were registered. After this the disease subsided, and only 22 deaths were registered during the last quarter of the year.

The total number of deaths from cholera was 611 against 1,916 in the preceding year, the rates being 1.3 and 4.2 per 1,000. Of these 327 were males and 284 females, being 115 males to every 100 females. The excess of male over female deaths is unusual and difficult of explanation. It occurred principally in the 2nd Division, in which 86 men died to 28 women.

During the year 1892 there was less cholera in the districts around Madras than in the previous year, and the outbreaks in different parts of the city could not be traced to importation. It appeared rather as if the disease were in the town though not very active. Sporadic cases occurred quite irregularly and, as a rule, showed no tendency to cause epidemic centres. The two small epidemic outbreaks appeared to be due to the meteorological and other conditions being especially favourable. It would be a great assistance in dealing with cholera if notification were made compulsory on all persons under a penalty. Though it is believed that considerable vigilance was shown by the Sanitary Overseers and special Overseers on cholera duty, somewhat less than 500 cases were reported. The relatives are quite capable of diagnosing the disease, but they are apt to conceal its existence in order to avoid the nuisance of having their houses disinfected, which is hardly to be wondered at when they believe that the sacrifice of a sheep or hen will be more efficacious. Public opinion on that point has, however, made some advance, for most of the people are anxious for their neighbours' houses to be disinfected when cases occur in them. It is, in many cases, through the anxiety of the neighbours that the existence of disease in a house is ascertained. Section 368 of the Municipal Act is of very little use, as it only requires medical practitioners to give information, and probably not more than 5 per cent. of the cases are seen by them. Moreover, there is no penalty for non-compliance. It would also be of great assistance if the hospital authorities would pass orders that the name and full address of every cholera patient admitted should be taken and communicated to the Health Department for the disinfection of the house.

Measles.—The deaths registered under measles numbered 374, against 372 in the preceding year. This disease has been very prevalent ever since the severe epidemic of 1889.

Fevers.—The deaths from fevers numbered 6,889, or 15.2 per thousand. This number is the highest recorded in Madras and is 2,556 above the average. The enormity of the ratio will be apparent when compared with the fever rate in England which is about 0.2. Though doubtless a fair number of cases of a non-malarial type were registered under this head, there can be little doubt that most of these deaths were due to fever of a malarial type, due to the polluted state of the ground and the inadequacy of the drainage of the town, insufficiency of food and clothing, overcrowding of houses and want of ventilation playing a secondary part in bringing about this result. It is noticeable that the ratios of mortality of Hindus and Mahomedans from fever, viz., 15.9 and 14.7, are considerably higher than that of Christians. This is attributed to the fact that a larger proportion of Christians live in healthy parts of the town and are well fed and clothed. The 2nd Division, which has an area of about a mile with 84,385 persons to inhabit it, provides the highest

fever ratio of 20·2 per thousand. The 3rd Division, which is under a mile with 59,457 inhabitants, comes next with a ratio of 19·4. These two Divisions together form Black Town. The third highest fever ratio is in the 1st Division, which includes the Tinnevely Settlement and other crowded parcherries. *Apropos* of what has been said of late of chill as the cause of Indian fever, it is worthy of note that in Madras the largest number of deaths occurred in August and September, comparatively warm months, and not in the coldest months of January, February, and December.

Bowel complaints.—The deaths from dysentery and diarrhœa numbered 3,958 against 4,573 in the preceding year, giving a ratio of 8·7 against 10·1 per thousand living. The rate varied from 7·5 in the 7th Division and 7·8 in the 2nd and 3rd to 10 and 10·4 in the 5th and 1st Divisions. It is somewhat remarkable that the 7th Division (Chintadripet and Triplicane) should have returned the lowest rate for these diseases for the last two years, as there are worse smells there than in almost any other part of the town.

ABSTRACT OF REPORT OF THE MUNICIPAL COMMISSIONER FOR THE CITY OF BOMBAY FOR 1892-93.

(Mr. H. A. Acworth.)

Public works.

DRAINAGE.—Pumping Station, Love Grove, Worli.—The four sets of Worthington triple expansion engines, sewage pumps, and Babcock boilers, for which, as reported last year, a contract had been entered into with Messrs. Simpson & Co., of London, were all delivered in Bombay by the 8th December 1892. The whole of this machinery was examined and passed in England by Major Tulloch, R.E., of the Local Government Board, on behalf of the municipality. The original intention of utilizing the existing engine and boiler house for the new engines was found to be impracticable, and an additional grant of Rs. 40,000 was sanctioned for the construction of a new engine and boiler house. The contract for this work was given to Messrs. Sittaram and Bibra, and on the 31st of May, 1893, the work was practically finished. To the same contractors was given the work of the brickwork bedding, above 78·50 T.H.D., for the new engines and pumps. The contract for the erection of the machinery was given to Mr. C. Briggs, and the time was five months from the 6th March 1893. The work was in progress at the end of the year.

The old engines and pumps have been kept going with such repairs as were from time to time indispensable. Owing to the large accumulations of silt in the sumps, there were two or three breakdowns, necessitating temporary stoppages. It was found impossible to keep the sewage down to the level of three feet, owing to the advent of the Tansa water, and to the decreasing efficiency of the engines. Mr. G. F. Horbury regularly inspected the station during the year and advised regarding the repairs necessary to keep the engines and pumps going until the new engines, &c., could be started. The coal has been purchased, as during last year, direct from the importers, and this arrangement has proved satisfactory. The excess quantity of coal consumed is due to the increasing inefficiency of the old engines, and to the centrifugals being kept working to cope with the largely increased quantity of sewage. A chawl of 17 rooms for the firemen, &c., has been erected, and quarters for the superintending engineer and second engineer were approaching completion at the close of the year.

House Connections in First Drainage Section.—As reported last year, this work was being proceeded with departmentally, and it was being pushed on vigorously, when the Corporation appointed a committee to inquire into the general question of the suitability of the existing system of connections and the possibility of improvements therein, and desired that, until the report of this committee was submitted, further work should be stopped, and it was stopped accordingly. The number of house connections made is 223, but none of the districts in which the work was being carried on have been entirely completed. Several meetings of the committee have been held, and practical experiments on certain schemes proposed by some of the witnesses are in course of trial.

The ventilation of the Queen's Road sewer has been improved by the erection of two masonry vent-shafts, and eight large manholes have been constructed on various points of the sewer to allow of greater facilities in cleaning it. The work of brick-arching over the old open main drain at the Arthur Road Crossing was put in hand on the 6th January 1893, and the work is now in progress. The work in house connections in the Agripada district is practically completed, there remaining but three houses to be connected and five masonry vent-shafts to be put up. The contract for this work was Rs. 2,05,791, and the value of the work executed is Rs. 2,00,352. Metal vent-shafts in Ripon Road have been erected. The laying of a pipe sewer in Government House Road, Parel, was commenced on the 26th April 1892, and the work was in progress at the end of the year. Pipe sewers and metal vent-shafts for Parel village are also under construction. A storm-water drain in Hornby Road, from opposite the Salvation Army Hall to the storm-water drain in Bazaar Gate Street, was completed.

Several additional latrines and urinals have been erected, while several others are in course of erection. The Night-soil Depot at De Lisle Road was completed and handed over to the Health Department. The Carnac Bunder Nightsoil Depot has been

maintained in good order. The supply of water from Tansa enabled arrangements to be made to use fresh water for flushing purposes, instead of, as hitherto, sea water; and from the 8th March last, the working of the pumping station at Carnac Bunder has been discontinued. The several drainage sluices were worked satisfactorily, and the work in miscellaneous drainage of repairing, altering, constructing, cleaning, and flushing sewers and drains was well done.

WATERWORKS.—Tansa.—The rainfall was 114.18 inches. The lake overflowed on the 11th July 1892 after 27.64 inches of rain had fallen. The lowest level before the monsoon of 1892 was 399.13 T. H. D. on the 16th June 1892. The lip of the lowest outlet is at 380 T. H. D. The overflow level is at 405 T. H. D., and on the 31st March 1893 the level was at 398.91 T. H. D. The average daily quantity drawn off during the year was 20½ millions of gallons. The dam continues in a completely satisfactory condition, and no damage was caused by the overflow which, on the 2nd September 1892, was of a depth of 1.06 feet. The total quantity which passed over to waste is calculated to be 30,000 millions of gallons. The duct from Tansa to Ghat Kopar was taken over from the contractors on 1st February 1893. No accident occurred to it. The 48" main failed on 8 occasions at different places between Ghat Kopar and Chinchpooqli and caused much inconvenience. The maintenance period of the contractor does not expire till the end of October 1893. The Tansa Works have not given nearly so much trouble and anxiety as might have been expected from the first year's working of such a large undertaking.

Vehar.—The rainfall was 129.38 inches, the heaviest on record since 1861. The average for the 32 years 1861 to 1892, both included, is 83.90 inches. The lake overflowed on the 27th August 1892, and the overflow ceased on the 8th October. The lowest water-level was 249.5 T. H. D. on the 7th June 1892. The storage on the 31st October 1892 was 11,155 millions of gallons.

Tulsi.—The rainfall was 144.15 inches. The lowest water-level was 434.45 T. H. D. on the 7th July 1892. The lake overflowed on the 17th August and continued to do so until the 5th October. The storage on the 31st October 1892 was 2,173 millions of gallons. The loss during the dry season—from 1st November 1892 to 31st March 1893—was 928 millions of gallons. The quantity of water which passed over the waste weir into the Vehar Valley is estimated at about 2,000 millions of gallons. Boundary stones 300 feet apart were fixed on the pipe line from Tulsi Lake to Mahaluxmi. The pipe line embankment between Mahim and Bandora was repaired, and the repairs to the embankment between Haines Road and Mahim are in progress.

Pawai.—The rainfall was 122.27 inches, and the lake overflowed on the 27th July 1892 and continued to do so until the 19th October. On account of the completion of the Tansa Works, the supply from this lake was not required. The decision of the District Judge regarding the value of the land acquired for the works was upheld on appeal to the High Court.

Bhunderwada (John Hay Grant) Reservoir.—The repairs have been continued during the year, the work done being the covering of the floor of the distributing basin with Indian patent stone 1" thick, and the plastering of the piers up to a height of 5' 6". The result has been that for depths of 13 feet and under the basin is in good condition. The distributing basin being under repairs, the filters could not be used, and Vehar water was supplied unfiltered throughout the year. Repairs to a portion of the embankment of the 32" main between Sion and Kurla were completed on the 25th June 1892.

The offer of rewards for the capture of crocodiles in the lakes and for finding of their eggs was continued, but the claims were only for two crocodiles and 18 eggs. The alleged presence of leeches in the water supplied from the lakes has not been substantiated, and in the cases investigated the evidence pointed to the leeches having come from the drains. No case has yet been proved of their coming from the lakes, nor of their being found inside the service reservoirs or mains.

Distribution and Maintenance.—The total length of new mains laid was 2,971 feet. The number of free supplies, dipping wells, drinking fountains, &c., is 174. The work of closing dipping wells and substituting taps is being proceeded with. The Dharsi Nanji Drinking Fountain in Argyle Road and also a new cattle-trough in the same road were taken over by the municipality. The number of notices issued to owners on account of faulty taps and service pipes was 3,906, against 3,192 in the previous year. Sanction was accorded to sever the connexions of 1,025 service pipes, but in only 199 cases were the connexions severed. There were in all 312 bursts of pipes, of which 174 were of 3", and 92 of 4" pipes. Many of the old 3" and 4" pipes have become quite unfit for the present high pressure. The 32" Vehar main failed between

Dadar and Matoonga Stations of the G. I. P. Railway on the 9th September 1892, but it was repaired by the 12th idem. The pipe was corroded from the outside to three-fourths of its thickness, the cause of corrosion being its contact with salt earth. Six hundred and forty-six new connexions were made, and 273 services were disconnected, the net increase being 373, thus bringing the total number of connexions to 18,486. The percentage of increase—2·1—is below that of former years, but it is the strongest testimony that the Tansa supply has effected a vast improvement, inasmuch as the number of complaints and the number of applications for second connections or enlargements are reduced. The meters in use at the end of the year numbered 1,426, or an increase of 107 on the number of the preceding year.

Public
health.

The state of the public health during the year under review has been unfavourable. The total number of deaths from all causes amounted to 26,518, equal to a death-rate calculated upon a population of 821,764 (the census of 1891) of 32·26 per 1,000 of population. This is an increase of 2,671 in the number of the previous year. The average number of deaths for the last five years is 23,339, or a death-rate of 27·50. The returns of mortality show an increase in all the death causes, except in that relating to the nervous system, in which there is a slight decrease. The chief increase of mortality has been from small-pox, fevers, phthisis, diseases of the respiratory system, and dysentery.

The sections of highest mortality were Parel, 47·59; Kamathipura, 46·15; 2nd Nagpada, 44·49; Omerkhari, 42·56; Khara Talao, 42·53; Mandvi, 41·61; Chukla, 40·47; Tardeo, 40·62; and 1st Nagpada, 40·15; and the sections of lowest mortality were the Water Division, 2·66; Fort (South) 8·60; Mahalakshmi, 15·34; Worli, 17·29; Walkeshwar, 17·32; Chowpati, 19·11; Esplanade, 19·37; and Sion, 20·56. The death-rate was highest amongst Hindu low castes, Jains, Mahomedans, and Bhatias, being 51·38, 46·42, 41·25, and 39·79 per 1,000 of population respectively. It was lowest amongst Europeans, Eurasians, Parsis, and Jews, being 20·10, 21·24, 23·78, and 26·88 respectively.

Cholera.—The number of deaths from cholera was 169, or five more than in the previous year, but 106 less than the average. The sections of greatest mortality were the Water Division, Mahim, Tardeo, and Fort (South). The highest mortality by class was amongst Jews, and the next highest was amongst Hindus of other caste.

Small-pox.—The deaths from small-pox were 541, or 433 more than last year and 311 more than the average. They occurred chiefly amongst Hindu low-castes, Native Christians, and Hindus of castes other than Jains, Brahmins, Lingaets, and Bhatias. The mortality was highest in three of the suburbs, Parel, Sewri, and Mahalakshmi.

Measles.—There were 710 deaths from measles, or 96 more than in the previous year; 598, or 84·22 per cent., occurred in the first three years of life. The highest mortality occurred amongst Jews and Hindu low-castes. The death-rate was highest in the districts of Dongri, 1st Nagpada, and Mandvi. In Upper Coloba, Fort (South), and Sewri there were no deaths.

Fever.—The enhanced mortality is principally due to the increased number of deaths from fever. There were 7,751 deaths from fever, or 914 more than last year, and 1,182 more than the average. The death-rate was highest in the districts of Sewri, Parel, and Mandvi. The greatest mortality (excluding the small population, 146, of Negro-Africans) was amongst Hindu low-castes, Jains, and Bhatias.

Leprosy.—There were 45 deaths from leprosy, or 61 less than last year, and 25 less than the average.

The number of births registered (exclusive of still-born) was 15,485, or 33 less than last year. Of these, 8,045 were males and 7,440 females. Excluding Negro-Africans, the birth-rate was highest amongst Hindu low-castes, Jews, and Parsis, and lowest amongst Brahmins and Buddhists. The sections giving the highest birth-rates were 1st Nagpada, Tardeo, Parel, and Sion.

Conservancy.—On an average 4,272 men and women and 1,046 scavenging and drain carts, and 203 night-soil and cess-pool carts were at work each day. The collection of garbage or cutchra was greater than in the previous year by 21 tons a day; 318,194 tons of garbage, equal to 871 tons a day, were collected and removed and disposed of, against 310,362 tons in 1891; 140,480 tons of night-soil, equal to 384·8 tons a day, were collected and removed, against 142,564 tons in 1891; 182·8 miles of covered drains were opened and cleaned, against 191 in the previous year. There were 2,267 bullocks owned by the municipality, and of these 132 died and 61 were cast and sent to Pinjrapole. Of the five horses, one was cast and sent to Pinjrapole.

ABSTRACT OF REPORT OF THE HEALTH OFFICER OF BOMBAY FOR 1892.

(*Dr. T. S. Weir.*)

The unfavourable state of the public health which had been anticipated from the beginning of the year has been observed, and has now to be recorded. The abnormal seasonal conditions of the previous year, which had been accompanied by a high fatality, have been followed by an even more unfavourable state of the public health and a higher mortality. In the second quarterly report of 1891 I apprehended that cases of small-pox would be prevalent during the cold season of 1892, and that a high mortality would be observed.

It has been observed in the sanitary history of this city that whenever the season may be abnormal, it is followed by a disturbance and unwholesome state of the public health. The readings of the thermometer and the dew point up to May were higher than in 1891, and the range of the barometer all throughout the year was lower. It was observed that in 1892, with a higher temperature and a higher dew point, there was a higher mortality.

The following note from a paper by Mr. Hutchinson on the Meteorology of the Bombay Presidency in 1891-92 will be of interest:—"The year 1891 has, as was anticipated in last year's sketch, been a year of barometric maximum, and has consequently been marked by an unseasonable distribution of rainfall throughout the greater part of the Bombay Presidency. The year 1891 was in some respects similar to 1877, and although it was not a year of intense famine, it will be remembered as a year of severe drought in the future meteorological history of India. From a scientific as well as from a practical point of view, the year presented several features of importance, such as a high barometer in June, a relatively low barometer in July, and an unusually late commencement of the monsoon rains on the West Coast of India."

The effects of these abnormal conditions of season have been observed and have had to be contended against, but the effects of other abnormal conditions within the city and arising out of the city life—the most fatal of all, wetness of ground and pollution—have had also to be combated with. We have had to contend with conditions of season unfavourable to public health and influencing the mortality as well as with other conditions within the city depressing the vitality of the population. The condition most serious of all is soil flooding and hence wetness of the ground from more water having been brought into the city than has been taken out of it.

There has been an enormous increase of the water-supply since 1892—from some 16½ million gallons to about 29 million gallons or more daily—and very little increase in the number of drains. The island is flooded and irrigated with water, and unless drains are constructed to take away the water that comes into the city, the life of a healthy population will not be possible; what has been seen in countries of marsh and wet—the poisoning of life from malarial fevers—will be seen here. It is not possible to look to the future except with anxiety. There has been, with incomplete drainage, an enormous quantity of water—some five or more million gallons of water daily—which the pumping power has been unable to remove, a floating balance indicating danger; and there must be still, even with perfect pumping power, an enormous quantity of water which will not flow away and will not be carried to the drains, because in more than half the island there are no drains. I hope much in the future from the new and powerful pumps and the increased pumping power which, it is believed, they will give, but drains must be constructed to carry the water to the tributaries of the pumps. However powerful the pumps may be, there must be drains in the districts which have no drains if the pumps are to remove the water and the drainage from the districts. The first principle of the preservation of public health is, that the water coming into the city should be taken away and not left in the soil, and this first principle has been neglected in Bombay. Even the water currents round the island have been obstructed by the causeways and embankments at Bandora and Coorla. The estuary between Bombay, Bandora, and Coorla is filling up. The

most offensive trades—the tanneries—discharge into this estuary, and the water at low tide is foetid.

During this year I have had to draw attention, not only to stagnation in sewage ways, but to the flowing back of the sewage. This was due to the pumping power not being able to remove all the water that flowed into the sewers. The completion of the system of drainage should be considered in all earnestness. For many years the improvement of the channels which carried rain water and sewage in the long inhabited portions of the island was deferred till a system of drainage had been approved. And for many years a system of drainage has been approved, but neither has that system been completed nor have the open channels been improved; and unless in the years to come drains are constructed more rapidly than in the past, few of the present generation will live to see this system of drainage completed. I take, for instance, Nagpada. Since 1881 I have been describing the imperfect state of the drainage of that crowded locality. Since 1875 the drainage of Nagpada has been under consideration, but unfortunately the consideration of the matter has done no good to the people. Reports do not do the work which drains do. Here is a reference in a not very old report on the drainage of Nagpada:—"I would now draw attention to a most offensive and loathsome drain which you inspected with me. The new Nagpada drain runs under two or three houses in Bellasis Junction Road. It was cleaned as far as these houses; but, fearing to injure their walls and foundations, the work had to cease near them, but was resumed in the road. This drain was found to be in a most filthy state; it has been well described as one of the worst drains, in point of construction, in the whole city." What has been done in the Nagpadas in the last 20 years? Nothing. The drains are getting worse, and our efforts to clean them only make them worse. Where there are trenches unmade, for rain waters into which drainage flows, each cleaning makes them deeper, and the construction of new drains or the repair of old drains has been put off until a general drainage scheme may be sanctioned and until it has been brought into the Nagpadas. In the last Annual Report I wrote:—"In 2nd Nagpada, where we have the greatest house-crowding, as many as 67·18 persons collected in (15 families to each house) each crowded dwelling, we have a mortality from phthisis more than twice the mortality in Byculla, nearly twice the mortality in Parel, and more than twice the average mortality in all the other sections of the city, and a fatality from diseases of the respiratory system twice the fatality in the whole city. In 2nd Nagpada the pressure of population is greater than in the most crowded and dense section of London."

There are districts which have no drains on which over 60 gallons of water to each inhabitant are poured. The result is pollution and unwholesomeness. Districts, such as Malabar Hill and Worli, which have natural drainage, may be saved for some time; but there will surely be a time when the population in each district will not be able to live in health. The population in the old undrained districts may be said to be living on damp ground. The population in the new undrained districts may be said to be living in pools of sewage. We see in every part of the island, where drains have not been constructed, damp ground or pools of sewage. If more water is taken into the city than is taken out of it the result must be so. In chawls occupied by classes who wash their clothes inside the chawls near water pipes, the ground and floors near the water pipes are splashed and wet. Looking at the wetness inside these chawls, I am doubtful as to the wisdom of allowing water pipes inside the dwellings of the poor. Not only are there water pipes on the ground floors of chawls, but there are water pipes on each floor, around which there is constant washing of persons and clothes.

To save the population from being poisoned by damp, in my opinion the water-supply in the ill-drained districts should be reduced to 20 gallons per head, and to 15 gallons per head in the undrained districts. Next to drainage the most important improvement needed is in the law bearing on building. After bad drainage the condition most affecting the public health is bad dwelling. The responsibility, however, is not with municipal officers, but with those who framed the municipal law. The state is very lamentable; it is this. On any ground on which a dwelling has been—a building without open space by which inner rooms can have openings to the open air can be built. I have been demanding, in my reports on applications for permission to build, open space for light and air, and I have been advised that my demands are not lawful, and I have had to abandon them, because they were useless and unlawful. If the law was enacted to protect the landlords, it has been contrived to injure the tenants, and the tenants are many. The

enormous immigration of labouring classes to the city makes their protection from the effects of over-crowding in dark and unwholesome buildings a duty of the highest public importance. In the drained districts there are dwellings on damp ground; in the undrained districts there are dwellings on sewage. Here is what has been proposed and done in Kamathipura in one street—four chawls under one roof and no side gully, the inner rooms having no communication with external air, and it could not be prevented.

Return showing the Number of Deaths from Different Causes in 1892.

Causes of Death.	Number of Deaths.	Rate per 1,000 of Population.	Remarks.
Small pox - - - - -	541	·66	
Measles - - - - -	710	·86	
Fever - - - - -	7,751	9·43	
Cholera - - - - -	169	·21	
Phthisis - - - - -	3,538	4·30	
Diseases of the Nervous System -	2,330	2·83	
" " Respiratory System -	4,601	5·60	
Diarrhœa - - - - -	1,172	1·43	
Dysentery - - - - -	651	·79	
Accidents - - - - -	392	·48	
All other causes, except Still-born -	4,663	5·67	
Total - - - - -	26,518	32·26	

Analysing the mortality from the chief death causes, the results are observed to be—an increase in the death-rate from fevers, small-pox, phthisis, diseases of the respiratory system, dysentery, diarrhœa, measles, and accidental deaths. The chief increase of mortality has been from small-pox, fevers, phthisis, diseases of the respiratory system, and dysentery.

At a period when measles and catarrhal affections are prevalent, a high mortality of children is to be expected. A high female mortality during child-bearing periods indicates conditions likely to be unfavourable to infant-life, and we observe that the female mortality during the nubile period has been again this year more than double the male mortality, and that the female mortality is lowest amongst the females who go out most into the open air and live in the most open dwellings—Europeans and Parsees—and highest amongst the females who go out least—Mussalman and secluded Hindus. This is as would be expected.

The highest mortality has occurred in Parel (47·59), which was the section in which the second highest mortality occurred in the last year. At Lalwady, Parel, there are frightful nuisances almost opposite a market, and the entrance to the gas works. The sewage is overflowing into the Dinshaw Petit Mill Tank. All these new houses—a group of "chawls"—have pipes down the sides, and these pipes, instead of doing good, are increasing the danger.

The condition of the group of chawls I now refer to from want of drains is fearfully dangerous. The Health Department took proceedings on account of the nuisances from want of drainage, but the magistrate decided that the department of the engineer should take action, and not the Health Department. I have in my former annual report and quarterly reports described the fearful conditions from water and sewage in pools. Of these, I need only refer to a nuisance around chawls alongside of a public road, and I earnestly hope that this nuisance may be removed within a short time.

Although the mortality in Kamathipura is high (46·15), it is not the highest, as in the last year. There are two improvements which should be carried out in Kamathipura—the drainage of the subsoil, which is almost up to the surface even in the hot season, and the improvement of buildings. A member of the corporation who has come to live in the Old Kamathipura district has seen to his amazement the water rising up through the floor of his house. I told him that it would be so, and even worse, before the rains were over. Kamathipura is now one of the densely populated localities. The section of third highest mortality (44·49) is 2nd Nagpada. In the beginning of the last year I drew special attention to this locality in a report, but nothing has been done since, and I am afraid nothing will be done, except what has been done during the last 20 years—the preparation of estimates. Works for improving

the district were postponed years ago until the general drainage scheme had been approved.

The four next sections of highest mortality are densely populated localities and localities imperfect in drainage. These sections are Oomarkhari (42.56), Khara Taloa (42.53), Mandvi (41.61), and Chuckla (40.47). All four sections have an old system of underground drains—imperfect, and leaking, and polluting the soil—many of them mere rain-water tracks or channels covered as the localities became populated. The imperfection in the old drains is greater every year because the scraping away of deposits in them scrapes holes. There are in three of the sections some pipe tributaries of the new system, but connections have not yet been made between houses and these tributaries, and therefore the pipes have not been of any use. The improvements needed in these sections are—drainage, ventilation, and improvement of buildings. The drainage of them is very urgent, and the improvement of the municipal law of building is also urgent.

Measles.—With an increased mortality from small-pox, there has been a greater number of deaths from measles, and also, as was expected, a high mortality from diseases of the respiratory system. The prevalence of catarrhal affections, which was observed in the previous year, continued during the early part of 1892.

Small-pox.—Small-pox was epidemic during this year, and the highest mortality in any year from small-pox since 1883 occurred in 1892; 541 deaths from small-pox were registered, being 433 more than in the last year, and 311 more than the average. There has, therefore, been a considerable increase in mortality. I anticipated, in the Second Quarterly Report of 1891, that small-pox would be prevalent during the cold season of 1892. The greatest number of deaths occurred in March, April, February, May, and January.

Fevers.—The mortality from fevers is the principal cause of the enhanced mortality. The total number of deaths from fevers is 914 more than in 1891, and 1,182 more than the average. The causes which have influenced the mortality from fevers I have discussed in the previous portion of the report and in many former reports. Beyond the conditions of season, which have to be calculated for, the chief causes are—imperfect drainage and excessive water and imperfect house ventilation, or, in other words, impurities of soil and air. The first fundamental principle regarding the public health is that the water coming into the city should be taken out of it, and this first principle cannot be applied in Bombay until the Island has been drained. In some of the open drain tributaries, as in Foras Road and Ripon Road, the sewage we have seen flowing back. I have had to draw attention, not only to stagnation in sewage ways, but to the reflux of sewage. This is due to the pumping power not being equal to remove all the water which flows into the sewers.

The apprehensions I felt when the Tansa water was introduced into Bombay have not been unfounded. In the first Quarterly Report of 1892 I wrote as follows:—

“I look with some apprehension to the future from the introduction of Tansa water. It must be remembered that a little more than half the Island has no drains, that all the refuse of the city is deposited in a depression midway in the Island under conditions which cannot now be considered safe.”

The future can only be looked to with great apprehension when it is considered that there has been since 1892 an enormous increase in the water-supply—from some 16½ million gallons to 29 million gallons or more daily—and very little increase in the number of drains to carry this water away, and that it must be years before many new drains are constructed. There has been an enormous quantity of water which the pumping power has been unable to remove—some millions of gallons which may be considered a floating balance indicating danger. I hope much in the future from the increased pumping power which has been erected. If the pumping power is not equal to all that is expected, disastrous effects on the public health may be expected. But, however good the system of pumps may be, drains must be constructed to carry the water delivered into the city to the tributaries of the pumps, and however powerful the pumping power may be, there must be drains in the districts which have no drains if that power is to be of full effect.

Examining the mortality from fevers, it will be observed that 6,284 are referred to remittent fever, being 757 more than in the last year, and 1,155 more than the average; 1,071 are ascribed to simple continued fever, being 161 more than in the last year and 43 less than the average; 377 are referred to ague, being 5 less than in the last year and 69 more than the average; 19 are ascribed to enteric fever, being 1 more than in the last year and 1 more than the average.

The mortality by districts is suggestive. The highest mortality has occurred in two districts of the suburbs in which the mortality ought to be low. These two districts are Sewri (20·45) and Parel (16·49). In the last year the highest mortality occurred also in Parel and Sewri (15·13 and 14·34 respectively). In both districts there are the same conditions, increasing population and want of drains in Sewri and Parel. A sewer has been constructed in a portion of the Parel district. The dwellings on either side of this sewer, in a very populous portion opposite a market, rest in sewage, and where the sewage accumulates and where people wade through it, a channel has been cut, through which sewage trickles into a mill tank. This is a melancholy and filthy state to surround crowded dwellings. I have in the annual report for 1890 referred to the drainage of Parel. As yet there has been little improvement; the condition is nearly as bad now as then, for there is the old foulness and the new foulness that has come with the new buildings. In Mandvi, the section of the third highest mortality (14·64), the connexions to such portions of the new system of sewers as have been constructed ought to be made. Mandvi, Khara Talao, and Chuckla are sections in which there is little space for ventilation, and densely crowded houses with high piling.

The highest fever mortality occurred again this year amongst the small community of Negro-Africans (130·13). Looking at the exceptionally high birth-rate amongst Negro-Africans there must be an increase in their population. Examining the total mortality, it will be observed that the chief increase has occurred amongst Hindu Low Caste, having risen from 14·85 in 1891 to 19·77 in 1892. The increased mortality in the mass of the Hindu population is equal to 8·66. In last year's annual report I suggested that the high mortality in that year amongst Lingaets was influenced by fluctuation of population, and in 1892 we observe that the mortality of Lingaets (14·03) is less than 1891. It is suggestive that while the total mortality amongst all classes from fevers is higher, the mortality from fevers amongst the Mussalman community is nearly the same (8·74) and amongst the Parsi population (6·38) is lower. The mortality amongst Jews (3·78) is also less, and amongst Eurasians (2·74) it is the same as in 1891, whereas amongst Europeans the mortality (3·36) is higher.

Cholera.—From cholera 169 deaths were registered, being 5 deaths more than in the last year, and 106 less than the average; 219 cases were reported, of which 169 ended fatally, giving a mortality of 77·16 to 100 cases.

The greatest number of cases occurred in August, September, October, and July—in fact, in the four months of the rainy season, when water in the soil is highest and the ground on which so much of the population sleeps is wettest.

As in previous years, most cases occurred in the population born outside of Bombay, and the mortality in these cases is higher than amongst cases in the Bombay-born people; 183 of the 219 total cases were born outside of Bombay :—

Birth place.	Attacks.	Deaths.	Percentage of Deaths to Attacks.
Bombay	30	23	76·6
Elsewhere	183	141	77·0
Unknown	6	5	83·3

If the cases are grouped according to periods of residence, it is observed that 45 of the cases were under three months and 21 under six months :—

Duration of Residence in Bombay.	Attacks.	Deaths.
Under 3 months	45	37
Under 6 months	21	20

The mortality, according to the source of water supply, is interesting. It will be observed that nearly the same number of cases as in the previous year used well water and that nearly the same number died, the proportion of deaths to cases in each year being nearly 94 per cent. In 1891, 16 people using well water suffered from cholera, and 15 died, while in 1892 it will be observed that 15 used well water, and 14 died.

	For 1892.	Attacks.	Deaths.	Percentage of Deaths to Attacks.
	Vehar, Tulsī, and Tansa water consumers.	172	129	75.0
	Well-water drinkers - - -	15	14	93.3
	Unknown - - -	32	26	81.2

The incidence of mortality by districts, although it cannot be said that cholera was epidemic at any one period or in any one locality during the year, is interesting, for it will be observed that in Girgaum the mortality (0.33) is less than in the last year, and that in Fanaswadi (0.20), where cholera was formerly in almost every year epidemic, only 5 deaths occurred. The low mortality in these two districts is the result of improvement in dwelling and in drainage. The highest mortality occurred in the Water Division (0.72), and in the undrained and damp district of Mahim (0.70). This district needs improvement. It needs drainage to carry away water, and it needs roads for ventilation.

Phthisis.—There is a very great increase in the mortality from phthisis, which is 406 more than the last year and 720 more than the average. The mortality is equal to 4.30 against 3.81 in 1891. The increase in this year over 1891 is nearly the same as the increase in 1891 over 1890. This increase is most serious, and I have been pointing out the causes which must be attributed to it. These causes are imperfect drainage and imperfect house ventilation. The locality in which the mortality is highest is Chuckla (9.47), and Chuckla was the locality of second highest mortality in 1891.

Digestive System.—To diseases of the digestive system 2,428 deaths were ascribed, being 371 more than in the last year and 266 more than the average. Of the deaths from diseases of the digestive system, 1,172 were ascribed to diarrhoea, being 143 more than in the last year, and 150 more than the average, and 651 were referred to dysentery, being 179 more than in the last year and 74 more than the average. To all other diseases of the digestive system 605 deaths were ascribed, being 49 more than in the last year and 42 more than the average.

Respiratory Diseases.—To diseases of the respiratory system 4,601 deaths were ascribed, being 222 more than in the last year and 670 more than the average. Of the deaths referred to diseases of the respiratory system, 2,919 were ascribed to bronchitis, being 114 more than in the last year and 470 more than the average, and 1,037 were referred to pneumonia, being 74 more than in the last year and 180 more than the average.

Nervous System.—From diseases of the nervous system 2,330 deaths were registered, being 117 less than in the last year and 240 more than the average.

Births.—The number of births is very nearly the same as in the last year, there being only a difference of 33; 15,485 living and 1,427 still-born births were registered. Of the living births 8,045 were males and 7,440 females. The proportion of males to females by the Census of 1891 was 170.60; but assuming that there were 100 males to 100 females, the birth-rate would be equal to 32.14 per 1,000.

APPENDIX.

No. 1.

MEMORANDUM by the ARMY SANITARY COMMISSION on the REPORT of the SANITARY COMMISSIONER with the GOVERNMENT OF INDIA for 1892.

1. *Sickness and Mortality in the European Army of India.*—The statistics of all sections of the community—the army, both European and Native, the prisoners, and the general population—are so fully discussed in this Report that we shall, in order to avoid repetition, deal with figures as little as possible, and endeavour to confine what remarks we have to make, on the one hand, to the great facts of the year as compared with those of other years, and on the other to the conditions, both general and local, which are associated with them. To begin with the European troops which garrison India, we learn that, as regards both the sick and death rates, their sanitary history as a whole was by no means so favourable as that of former periods. For the purposes of comparison the averages of three different ten years are given, viz., from 1870–79, from 1881–90, and from 1882–91. In order to make the periods correspond with the times of the censuses the year 1880 has been left out. It will be observed, also, that the two last decennial groups overlap one another. According to the foot-note to the opening abstract in paragraph 2, the reason for this would seem to be that the statistics from 1881–90 include the men in Afghanistan during 1881, and thereby include an element which might render the comparison faulty. As a matter of fact, the results of the two periods 1881–90 and 1882–91, are almost identical, but as the years included are not the same in both it may still be true that the statistics of the army in Afghanistan did introduce a very disturbing element which has been neutralized by the events of other years. We doubt very much the advantage to be derived from the construction of the averages over a series of years, except in a very simple form. The most valuable facts are apt to be lost sight of in them altogether. A period of ten years may, and judging by past experience certainly will, include several that were most unhealthy and others that were distinguished by an unusually small amount of sickness and mortality, but the average of the whole period will not tell us, or, in fact, give the smallest clue to the nature of the items of which the averages are composed. We should much prefer to have a few simple statistics of each individual year to the most elaborate statements regarding ten-year periods taken as a whole. But, looking at the figures as they are given, we learn that in 1892 the European troops throughout India suffered from sickness more than the average. The admission-rate (1,517) and constant sick-rate (84) were considerably higher than in 1891 or than the average of the ten-year periods with which they are compared, and the death-rate (17·07) was also the highest excepting that of the ten years (1870–79), when it averaged 18·34. The invaliding rate (24) was low. Considering the very unhealthy character of the year and the great sickness and mortality which prevailed over most parts of India, the results in the European army are more favourable than were to be expected.

2. *Comparison of Presidencies.*—In the European army of Bengal during 1892 the statistics of sickness and deaths closely resemble those already given for the European army of India as a whole. Sickness was very prevalent. Both admissions into hospital (1,582 per 1,000) and the daily number constantly sick (87) were in a high ratio, and the mortality (19·81) was greater than that of former terms, with the exception of the average of the ten years 1870–79. In Madras the death-rate was much lower (12·32), and the admission-rate (1,236) was also lower than in the previous year, but the constant sick-rate (83) was higher. In the Bombay Presidency the admission-rate (1,593) was slightly in excess of that for Bengal, but the constant sick-rate (74) was considerably less than that of either of the other Presidencies, and the death-rate (12·90) was but slightly in excess of that of Madras. If, therefore, we compare the three Presidencies as respects admissions into hospital they stand thus: Bombay, 1,593, Bengal, 1,582, and Madras, 1,236; as regards the constantly sick, Bengal, 87, Madras, 83, and Bombay, 74; and as regards mortality, Bengal, 19·81, Bombay, 12·90, and Madras 12·32.

3. *Statistics of the Ten-year Periods 1860–69 and 1870–79.*—In illustration of what we have said of the value of the statistics of single years as compared with the averages deduced from a series of years, it is of interest to note the annual items of which the averages for the ten-year periods quoted on this Report are composed. In the army of India, as a whole, the first such period available is for the ten years 1870–79 and for this period the average admission-rate is 1,474·8, but taking the individual years, as shown in Dr. Bryden's volume for that time, we find that the annual rate varied from 1,257·3 to 1,871·2. In the same way the constant sick-rate, which averaged 60 for the ten years, varied between 55 and 75 per 1,000, and the mortality, which averaged 19·34 fluctuated between

12·71 and 34·55. The mortality of one of the years was nearly three times that of another. The statistics of the earlier decade 1860–69 are available for the Bengal Presidency only, and here we have further illustrations of the imperfect, and indeed altogether erroneous, impressions which averages are apt to convey. For this period the constant sick-rate for European troops in Bengal averaged 67, but the range between one year and another of the series was from 52 to 83. The average admission-rate (1,754) fluctuated between 1,412 and 2,051, and the death-rate, which averaged 29·98 is composed of annual ratios ranging between 20·11 and 45·93. Similar examples might be given from the experience of the other two Presidencies, but enough has been said to show how important it is, for the right understanding of Indian health statistics, that the facts regarding individual years should be kept clear and distinct.

4. *Comparison of Groups.*—A sketch map has been added to this Report, in which the boundaries of the several groups are shown, and this greatly facilitates the proper understanding of the statistics regarding them. In Table XVIII. full particulars appear regarding each group—the constant sick in every month, the ratio of admissions from all the chief diseases, and the death-rates also distributed according to causes. The Gangetic Plain afforded the highest sick-rate (104), the Indus Valley and North-West Rajputana the largest admission-rate (2,008), and this group contributed also by far the highest mortality (31·81), the next highest being 22·01 in the Upper Sub-Himalayan group, the Hill convalescent depôts, which compose the last group, being left out of the comparison for obvious reasons. In Decennial Table XVIII. similar information is given regarding each group for the antecedent ten years 1882–91, so that the results of 1892 may be compared with those of the preceding decade. Of the general population during 1892 we have little to add to the remarks made in our memoranda on the Provincial Sanitary Reports, but we may notice here two points of interest. The first is that the distribution of the sickness and mortality among the European troops in 1892 bears testimony to the general accuracy of the facts recorded in the death registration during that year. The people as a rule suffered most in those parts where the exact statistics show that sickness was most prevalent. The other point is that, when the mortality among the people was in nearly all the provinces greatly in excess of that of ordinary years, the loss to the European army was comparatively small, a fact which speaks well for the sanitary care which is taken of them.

5. *Comparison of Stations.*—Statement No. XIX. is the first of the valuable series annually devoted to the statistics of stations. It deals separately with 117 distinct places in addition to troops marching, and is followed by others numbered XX. to XXVIII. which show the extent and nature of the sickness in each place and the mortality which it occasioned. In Statement No. XXXII. there is a still more complete return of the causes of admissions into hospital and of deaths in and out of hospital in 145 separate places in the three Presidencies, every detachment, however small, being shown separately. Omitting very small bodies of men and convalescent depôts the maximum daily sick-rate was at Myingyan (154), and the lowest (27) at Port Blair. The highest admission-rate (2,524) was at Delhi, and the lowest (719) at Port Blair. The greatest mortality was 69·65 at Myingyan; at several places there were no deaths. In quoting these figures we have taken no account of places where the garrison was under 100 in strength, and which were occupied for only a small portion of the year. We shall revert again to the statistics of stations in connection with the account given of their sanitary or insanitary condition, but before coming to this important part of the Report we must first glance at the general history of some of the more prominent diseases.

6 *History of more prominent Diseases. Influenza.*—The following tabular statement continues the history of the influenza epidemic among troops and prisoners during 1892:—

Influenza among Troops and Prisoners.

	Strength.	Monthly Number of Admissions into Hospital.												Ratio per 1,000
		January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	
European Troops :														
Bengal -	42,198	49	26	255	208	47	2	28	8	—	—	—	—	14·8
Madras -	13,227	—	16	98	33	10	2	4	—	—	—	—	—	12·3
Bombay -	12,712	64	11	1	—	—	—	—	—	—	—	—	—	6·0
Native Troops :														
Bengal -	65,594	388	203	374	128	16	3	—	—	—	—	—	—	17·0
Madras -	25,963	1	8	67	10	—	—	—	7	—	—	—	—	3·6
Bombay -	23,355	73	36	7	—	1	—	5	—	—	1	4	18	6·2
Prisoners :														
Bengal -	103,159	589	806	2,947	1,059	223	89	60	65	38	12	7	6	56·7
Madras -														
Bombay -														

Comparing the figures with those in the similar statements contained in our memoranda on the Reports of the Sanitary Commissioner with the Government of India for 1890 and 1891, it appears that, while not so prevalent in 1892, as it was in 1890, influenza was more so than it was in 1891,

and this remark applies not only to the figures as a whole, but also to those concerning each section of the communities to which reference is made, with the sole exception of the Native troops in the Bombay Presidency, who suffered less in 1892 than in 1891. In each of the years there is marked evidence of the differing intensity of the epidemic. In 1890 the minimum admission-rate was 19·4 among the European troops in the Bombay Presidency, and the maximum 136·6 among the prisoners in the Madras Presidency. In 1891 the range was between 1 among Madras Native troops, and 19·0 among prisoners throughout India, while in 1892 the minimum, as above shown, is 3·6 among Madras Native troops, and the maximum 56·7 among prisoners. The epidemic affected a very large area. In December 1891, after considerable abatement, it showed decided signs of revival, it continued during the early months of 1892 with some severity, and then in August it almost disappeared. Among European soldiers in the three Presidencies not a single case was recorded after that month. Among native troops serving in India the only exception to this same rule were 4 cases at Quetta in November and 17 in December, an exception which is not to be accounted for on the supposition that the disease had only reached this distant part of the country thus late in the year, because a few cases had already been recorded there in the months of February, March, May, and July.

7. *Cholera*.—It is gratifying to find that in a year when cholera was so widely prevalent over India the mortality which this disease occasioned among the European troops was only 2·42 per 1,000 in Bengal, ·53 in Madras, and ·94 in Bombay. The 167 cases which occurred among European troops in all three Presidencies were distributed over 33 different stations, the largest number in any one of them having been 27 at Ferozepore. Among native troops throughout India the cholera deaths equalled 2·14 per 1,000, and the 424 admissions from this cause took place in 73 different cantonments, or bodies of soldiers on the march, the large number of 60 having occurred at Almorah and its outposts. In the jails the disease was more prevalent. Sixty-eight of them were attacked and in several of these the mortality was serious, notably in Coimbatore, where of 127 cases 62 were fatal. We have already in our memoranda on the Provincial Sanitary Reports for 1892 noted the principal facts regarding the incidence of cholera among the general population. In the Report now under review the statistics of cholera in all the provinces have been collated, and the general result is that never has any cholera epidemic in India been known to be so destructive to human life. The total deaths aggregated 762,695, the largest number that has ever been recorded. An interesting question arises in connection with this severe epidemic, which, it will be remembered, was not limited to 1892 but had extended also over 1891, when the registered cholera mortality, already considerably less than that which followed in 1892, was still the heaviest that had occurred since 1877. The question is this—Does such increased prevalence of cholera in India mean increased danger of the disease attacking other countries? In the recent International Sanitary Conference which assembled at Paris, we observe that it was sought to place such a construction on the figures of recent cholera mortality in India, but it was based on purely theoretical grounds. No facts were adduced to show that extraordinary prevalence of cholera in India had been followed by the extension of the epidemic to European or other countries. The matter is deserving of further investigation, both as regards the past and the future, for it is one of much practical import. So far as we read the history of cholera, we believe that there are good grounds for concluding that prevalence of cholera within a given area and epidemic movement beyond that area are two entirely different things, and that the one is not to be regarded as the cause of the other, because they are by no means commonly associated. Much interesting information regarding cholera is contained in this Report, but there are two points in regard to which we should like to have the facts in future more fully detailed. In paragraph 157 we read that among European troops in 9 of the 38 outbreaks “cholera is said to have been imported,” and in other seven “this was thought to have been the case.” A similar remark follows regarding Native troops and prisoners. A mere counting of opinions on such a matter is of little value. The Sanitary Commissioner might with advantage examine the evidence in each case, and show how far the opinion is substantiated by the facts. Another matter of great practical importance is the effect of moving into camp. It is recorded that these were “generally satisfactory,” but it would be very useful to know what appeared to be the reasons of failure where the move was not successful. Had it been delayed till too late, or was there some other cause, it may be some undiscovered cause, why the disease was not arrested? A full account of what occurred in such outbreaks, for example, as those two already referred to among the Goorkhas at Almorah, and in the Coimbatore jail, would help to furnish an answer to such questions. The statement that “48 parties were encamped from 19 jails, and 74 seizures were recorded subsequent to removal,” leads to the inference that removal into camp was not made so promptly in the case of prisoners as it ought to have been, for 897 cases of cholera occurred among them during the year. Of these all but 74 would seem to have occurred in the jails. There is no preventive against cholera which has proved so valuable as removal from the affected locality, but it requires careful watching to ensure its being carried out with the promptness which is essential to success.

9. *Malarial Fever*.—In a year when, as evidenced by the mortuary statistics of the general population, fevers of a very severe type were unusually prevalent and fatal over great part of India, it is not to be wondered at that among the troops both admissions and deaths under this head show a decided increase over those of ordinary years. Under all three forms, of intermittent, remittent, and simple continued, this result is observed for the European Army as a whole; but if the statistics of the Presidencies are separated, it will be seen that the fever prevalence was confined to Bengal and Bombay. Madras escaped, and in the south the year was remarkable for the small proportion of cases. The group which includes this part of the country returns only 131·0 admissions per 1,000, whereas in the

Indus Valley group they equalled 1,097·6 per 1,000. There are discrepancies in the fever ratios between those of Table XVIII. and those of Table XXVI. which we are unable to reconcile. The fever ratios above quoted are the aggregate of the figures of Table XVIII., showing the admissions per 1,000 from intermittent, remittent, and simple continued fever, but in Table XXVI. the malarial fever cases appear as only 71·0 per 1,000 in the one group and 987·4 in the other. Similar differences appear in other groups. If we look at the details of Table XXVI. we see further evidence of the inequality of the fever distribution, and find it even in different cantonments within the same group. In the Upper Sub-Himalayan group the range is between 84 at Bareilly and 1,527 at Amritsar. There was also an increase of malarial fevers among Native troops during 1892. If we take the returns for the whole of India there is no great difference in their prevalence among them and among European troops, the admissions having equalled 550 per 1,000 in the one case and 504 in the other. A comparison of groups and stations shows the same marked extremes. In the station of Wuntho in Burma, among a small body of men, malarial fevers give the maximum admission rate of 3,652 per 1,000, but even this high ratio is exceeded by the return of 3,781 in the Central jail at Lahore. In the jails of the Northern Punjab generally, and of the Upper Indus valley, these fevers were extraordinarily prevalent; but for the prisoners throughout India as a whole the admission-rate, 526 per 1,000, did not differ much from that of the troops.

9. *Enteric Fever.*—Enteric fever in the Report is shown separately from malarial fevers, and this has been the practice for many years. It is, no doubt, desirable that this should be done, as this fever is characterized by a specific lesion, but it is still open to doubt whether the division between the two is strictly logical. The year under review, as we have already remarked, was one of remarkable fever prevalence over great part of India. So was 1891, and in both years the mortality from enteric fever among the European soldiers was very heavy. The usual experience as regards the greater liability of young and unacclimatised soldiers to this form of disease is again repeated. As to the cause to which these unsatisfactory results are due no new light has been thrown. The Sanitary Commissioner observes: “The practical conclusion of the whole matter is an old one, that to protect the men of the army of India from enteric fever it is necessary to have soldiers clean and well cared for in every respect, internally as well as externally, placed in clean surroundings, and to extend the area of cleanliness far beyond cantonment limits; in fact, ultimately throughout the length and breadth of India. It is a good thing to secure the cleanliness of the immediate environment of the troops, but they will never be safe as long as the Native population and its towns and villages are left uncleansed to act as a reservoir of dirt and disease.” Such reforms are doubtless most desirable, but in endeavouring to ascertain the causes of any special disease we must not ignore the facts, and it is a very singular fact, which as yet admits of no explanation, that the Native population who live in the midst of this “reservoir of dirt and disease” do not suffer to any appreciable degree from this enteric fever which proves so fatal to British soldiers, especially during their early service in India. Of this we have decided evidence in paragraph 80, from the 20 years’ records of the post-mortem examinations of fever patients in the Calcutta General Hospital, and from the testimony of Dr. Crombie, who, as the result of his long experience, “was not aware of ever having seen a case of enteric fever in a native of Bengal, though he had seen cases among Goorkhas and Burmans.” The returns of both Native troops and prisoners fully bear out this remark. The statistics of 1892 show the death from enteric fever of 15 officers and 376 European soldiers. The reports of the medical officers might enter more fully into the antecedent circumstances. More might, we believe, be accomplished by a careful examination of the history of each case previous to attack, showing how far the disease may be accounted for by unusual exposure or fatigue, by indiscretion in diet, or any other special cause. This is already done in respect of cholera, and a similar summary of the evidence annually gathered regarding all the cases of enteric fever would be a valuable addition to the Sanitary Commissioner’s Report.

10. *Venereal Disease.*—Next to malarial fevers, venereal diseases continued to be the main cause of inefficiency in the European army as a whole. In Bengal, and in Bombay, also, this was the case, but in Madras they occupy the first place, and account for 415 cases per 1,000, the proportion contributed by malarial fevers being only 239. For the last five years the general venereal ratios for the European army of India stand thus per 1,000 of strength:—

1888	-	-	-	-	-	-	-	-	370·6
1889	-	-	-	-	-	-	-	-	418·5
1890	-	-	-	-	-	-	-	-	503·5
1891	-	-	-	-	-	-	-	-	400·7
1892	-	-	-	-	-	-	-	-	409·9

The ratio for 1892 shows an increase of 9 cases per 1,000 over 1891, but the rate for 1891, it will be observed, was over 100 per 1,000 less than it was in 1890. Still, even with this diminution as compared with 1890, it admits of no question that in 1892 venereal diseases prevailed among European soldiers in India to such an extent as to constitute a most serious cause of inefficiency. In a separate memorandum which we submitted in December 1893, we discussed this question at some length, and gave the reasons why we arrived at the conclusion that the evil had been very slightly mitigated in India under the lock hospital system, and that the re-introduction of this system on sanitary grounds could not be recommended. We need not pursue the subject further now, but it may be useful to reproduce here a statement which was appended to that memorandum, showing the statistics of venereal disease among the men serving in the United Kingdom for the six years during which the Contagious Diseases Acts were more or less in force, and the next six years when they had

ceased to be in operation, and from which it will be seen that the ratio of admissions per 1,000 has decreased since the Acts were abolished :—

TABLE showing the ADMISSION and CONSTANTLY SICK RATES for VENEREAL AFFECTIONS in the UNITED KINGDOM during the 12 years 1881–92.

Year.	Ratio per 1,000.		Remarks.
	Admitted.	Constantly sick.	
1881 - - - -	245·5	16·67	Contagious Diseases Acts in force.
1882 - - - -	246·0	16·86	
1883 - - - -	260·0	18·54	Contagious Diseases Acts partially repealed in May.
1884 - - - -	270·7	20·14	
1885 - - - -	275·4	19·34	Contagious Diseases Acts repealed in March.
1886 - - - -	267·1	19·29	
1887 - - - -	252·9	19·10	
1888 - - - -	224·5	18·19	
1889 - - - -	212·1	16·96	
1890 - - - -	212·4	17·07	
1891 - - - -	197·4	15·34	
1892 - - - -	201·2	16·46	

These figures suffice to show how very little influence the Acts could have had in diminishing venereal disease, under conditions more favourable to their operations than those which exist in India.

11. *Local insanitary Conditions.*—There are many other points of interest in connexion with the health of the European soldier in India on which we might dwell, but we shall confine ourselves to a consideration of the causes of disease so far as they are set forth in this Report. Of general causes, such as climate and the very unhealthy character of the year, we need not speak, as these are matters beyond control; but we may again note in passing, as a matter for congratulation, that in both 1891 and 1892, when sickness was so generally prevalent and severe, the mortality among the European troops was not greater. The ideal which the Royal Commission on the sanitary state of the Army in India set before them was that, with an improved state of things, the death-rate among British soldiers in India might be reduced to 20 per 1,000, but, even in these two unhealthy years which we have mentioned, the mortality was only 15·89 in the one and 17·07 in the other. There still remain many local causes of disease, and the great aim and object of the Sanitary Department is to endeavour to discover what these are, and, if possible, to apply a remedy. It was with this great and practical end in view that the annual Cantonment and Sanitary Reports were instituted, and we turn to the abstract of these reports, commenced on page 182, for valuable information on this subject. We find, however, that these reports include only those cantonments which are in the Bengal Presidency. It is very desirable that those in the other two Presidencies should also be included, and that in every instance where sickness was prevalent the local cause, if discovered, should be pointed out and that if not discovered a remark to that effect should be made. In not a few of the Reports mention is made of prevailing sickness, but nothing is said of insanitary conditions. We referred to these defects in our Memorandum on the Report of the Sanitary Commissioners with the Government of India for 1891, but the subject is of so much importance that we have thought it right to refer to them again here.

12. *Sickness and Mortality in the Native Army.*—In our remarks on European troops we have already referred to certain points connected with the health of the Native Army. The general results of the year were that, owing to the prevalence of influenza and malarial fevers, there was an increase in the sick-rates, but that the mortality was less than in the year previous. According to Presidencies sickness was greatest in Bengal, 1,234 cases per 1,000; then comes Bombay with 1,130, and Madras with only 868. As regards mortality the order is different. Here, including deaths among men on leave, Bombay returns only 12·48 per 1,000, Bengal 19·70, and Madras 23·00, a result due to Burma, the Native garrison of which is largely composed of Madras troops. In many of these Burman stations sickness was extremely prevalent. Among the small garrison of Wuntho the admissions into hospital attained the very high ratio of 4,575 per 1,000, and in 10 other stations of Burma they exceeded 2,000; but these unfavourable returns are more than neutralized, as regards admissions, by the small proportion of sickness among Native soldiers in other Madras stations. In nearly all the Burman stations the death-rate was heavy. Omitting very small bodies of men, there are eight stations in which the rate exceeded 30 per 1,000; among these the range is from 33 to 94 per 1,000. The summary of the sanitary sheets of Native corps, unlike the Cantonment Sanitary Reports, includes all the three Presidencies, and notes every detachment separately. We thus have the means provided for comparing the extent of sickness and mortality in each locality with the condition of the place itself. As we have remarked in former memoranda, the information on this last point might be more full, and we still hope that in future Reports endeavour may be made to make this practical part of the annual Report as full as possible. Among the insanitary conditions which have been noted, one of the most common was overcrowding. As a rule this was only slight and temporary, but in other cases it was more serious and long continued. At Wuntho, for example, where, as we have already seen, sickness was at its height, there was “continuous overcrowding,” and in other places it existed for months. Among other causes adduced to account for disease, we

observe the following—insufficient clothing and diet while on field service, privations and hardships of former campaigns in unhealthy parts, damp and malaria; imperfect drainage, heavy duties, impure water, food of inferior quality, exposure to wet, defective conservancy, want of personal cleanliness, errors in diet, climatic conditions, defective ventilation, rank cultivation and irrigation in the immediate neighbourhood. Of these some are beyond control, but most of them are capable of being dealt with in such a way as to prevent their becoming causes of sickness. — Overcrowding in particular is an evil which is attended with special danger.

13. *Sickness and Mortality among Prisoners.*—As might have been anticipated from the generally unhealthy character of the year, the statistics of both sickness and mortality among the prisoners throughout India during 1892 were not favourable. As so commonly happens when provisions are dear, there was a considerable increase in the jail population in several of the provinces, and more especially in Madras. It is not surprising, therefore, to find that the evil of overcrowding to which we have drawn attention in former years, existed in very many of the jails during 1892. As usual malarial fevers were the chief form of sickness, followed at a long interval by dysentery, diarrhoea, and respiratory diseases; the main causes of mortality being first dysentery, then respiratory diseases, next diarrhoea, and after that cholera. In Table XV. an interesting comparison is made of the statistics of sickness and mortality in the different provinces, and in subsequent tables similar information is given regarding individual jails. The Sanitary Commissioner has already drawn special attention to those in each province in which the death-rate was high, and we shall take a few figures he has extracted from the general Tables and consider them in connection with the information contained in the sanitary sheets summarised at page 107. Of all the administrative areas the Andaman Islands present perhaps the most unsatisfactory results as compared with former years, for in spite of their continued exemption from cholera, which is so remarkable, the death-rate in 1892 rose to 50·78, the average of two former periods having both been under 30 per 1,000. The Andaman convict settlement is not included in the summary of sanitary sheets, and we would suggest that this omission should be rectified in future Reports. In Burma there were seven jails in which the mortality varied between 48 and 102 per 1,000. In them, the insanitary conditions noted are various, such as unsuitable clothing, defective drainage, “climatic causes,” defective ventilation, bad water, and some overcrowding. The Gauhati jail in Assam is selected for special notice on account of the very high death-rate of 133·33 per 1,000 but the sanitary sheet does not record the causes of this very fully. It says, “Drainage defective during heavy rains. Water-supply unsatisfactory. The jail is between a native bazaar and a filthy tank. Dysentery due to malaria and exposure.” In the North-west Provinces and Oudh 22 jails are noted as having returned a death-rate above the average of the province as a whole, the rate in each varying between 30 and 75 per 1,000. In 13 of these there was more or less overcrowding. At Ghazipur the sickness and mortality are ascribed chiefly to “admission into jail of prisoners in a half-starved and broken-down condition of health consequent on the failure of crops in the preceding year.” The same remark is made concerning Basti and Gonda, and although nothing is said of this cause of unfavourable results in the other jails on this list during 1892, even where, as in the jail at Aligarh, the admissions (1,846) and the mortality (60·61) were both very high, there can be no doubt that the dearthness of provisions and the privations which the prisoners had in consequence suffered before incarceration must have exercised a very prejudicial influence on the jail statistics during the year. In the Punjab 15 jails were distinguished by excessive mortality and in many of them sickness was remarkably prevalent. We have already noticed the extraordinary admission-rate of 4,547 in the Lahore Central Jail. Although none of the others attained to this maximum, sickness was very prevalent in all of them and the death-rate varied from 30 to 75 per 1,000. In several overcrowding is recorded as one of the insanitary conditions present, but, as a rule, sickness is referred not to any local defects but to general causes operating over the whole district. At Shikarpur, in the Bombay Presidency, where with only 732 admissions per 1,000 the deaths equalled 121·60 per 1,000, it is said there was “overcrowding throughout the year,” but it is added that the “ventilation was excessive and warm clothing insufficient.” We find, on reference to the Tables of individual jails, that more than half of the deaths among the prisoners at Shikarpur were due to pneumonia. It is usual to ascribe such diseases to chill or cold, or want of sufficient clothing, but there is good reason to believe that the pneumonia which is so frequently observed among Indian prisoners, and which proves so fatal, is not due to such causes but to impure air acting on constitutions already debilitated by malarial fever. On this point we fully agree with the remarks made in his last report by Surgeon-Major Bate, Inspector-General of Prisons in the Punjab. We have said enough to show how important it is that in the case of each individual jail the extent of sickness and mortality should be studied in immediate connection with its local conditions, and how much more complete information is desirable under this last head. Of the jails in the other provinces it will suffice to note that more or less overcrowding was a common defect in Bengal proper, and also in Madras.

14. *Further researches on Cholera.*—A very interesting paper which has been written by Brigade-Surgeon Lieutenant-Colonel D. D. Cunningham, Special Assistant to the Sanitary Commissioner with the Government of India, is abstracted in the concluding paragraphs of this Report. It contains the results of a long continued and careful investigation into the much vexed question of the comma bacillus. Certain distinct forms of comma bacilli have been in continuous cultivation in the Calcutta Laboratory for four years, and various others for periods ranging from over three years to one year and a half; and the conclusion at which Brigade-Surgeon Cunningham arrives after an examination of all the evidence is, that there is no one specific choleraic comma bacillus, and that “any theory ‘ascribing the choleraic condition to the action of any distinct species of intestinal organism which has ‘yet been discovered comes to the ground.’”

15. *General conclusions on all the Indian Sanitary Reports for 1892.*—We have nothing further to add to what we have already noted in the memoranda on the Provincial Sanitary Reports as regards the general population. We are gratified to find from a recent despatch* of the Government of India that most of the suggestions we have made in our previous memoranda, mainly concerning the Provincial Reports, have been adopted, and we shall await with interest the results of the alterations proposed. We shall not make any further suggestions regarding these Provincial Reports at present, but we would recommend in respect of the Report of the Sanitary Commissioner with the Government of India, that more definite information should be furnished every year on the following points:

- (1.) Regarding the Indian pilgrims proceeding to Mecca and returning therefrom. In our memorandum on the Report of the Sanitary Commissioner with the Government of Bombay we have detailed the exact points on which data are wanted.
- (2.) Regarding sanitary works in each Province, such as drainage and water-supply, as distinguished from money spent annually on conservancy and other establishments. It is very desirable to show by a comparative statement what every province is doing annually in this important matter.
- (3.) It would be well to add to this a comparison of the statistics of mortality in those places where such improvements have been carried out, with their experience of former years, and also with that of other places where no improvements had yet been effected.
- (4.) That Annual Cantonment Sanitary Reports should be furnished from all cantonments and not only from those in the Bengal Presidency, and that in preparing them, and also the sanitary sheets of Native troops and jails, great care should be taken to make them as complete as possible.
- (5.) That a sanitary sheet should be introduced for the Andaman Convict Settlement.
- (6.) That as regards cholera an analysis should be given of the evidence adduced in those instances in which it is alleged that the disease was due to importation.
- (7.) That in all cases in which movement into camp has not been successful in arresting cholera outbreaks a full account should be given of the circumstances, and of the causes which seem to account for the failure.
- (8.) That a summary should be given of the antecedent circumstances, if there were any worthy of note, in the history of all European soldiers annually attacked with enteric fever.

19th July 1894.

No. 2.

MEMORANDUM by the ARMY SANITARY COMMISSION on the REPORT of the SANITARY COMMISSIONER of BENGAL for 1892.

1. *Unhealthiness of the Year.*—The most remarkable fact in the sanitary history of Bengal for 1892 is the great unhealthiness of the year. In 1891, which was also a time of unusual sickness and mortality, the deaths registered reached a total of 1,896,261, but in 1892 the total rose to 2,247,275, or from 26 to 31 per 1,000. The increase is to be found among both sexes, in all ages, and under all the great heads or causes among which the deaths are recorded. Cholera, small-pox, fevers, dysentery and diarrhoea, and other causes all show a more or less decided advance in the death-rate, the only item in which there is a decrease being injuries. Nor are the results confined to one or more districts or divisions in which exceptional sickness prevailed to such an extent as to affect the statistics of the whole province in an unfavourable way. On the contrary, the greater unhealthiness of 1892 seems not only to have been very marked, but also widely diffused. Of the 46 districts all but seven return a higher mortality than they did in 1891, and in many of them the difference is very great, as for example, in Backergunge, where it rose from 27 to 43 per 1,000; in Balasore, from 26 to 43, and so on with many others that might be named. If the towns are taken by themselves similar results are to be found. Of the 145 mentioned in the comparative statement given at page 10, 104 returned a higher death-rate than in 1891, and many of them a much higher death-rate. There can be no question then that the statistics of 1892 indicate a great and widespread increase of disease among the people of Bengal during that year, even when compared with the unsatisfactory results of its immediate predecessor. It is true that some part of this increase may be fairly ascribed to improvement in the registration, but this is a quantity which cannot be even vaguely estimated. Some measure of it might have been arrived at by comparing the statistics of troops and prisoners and of the charitable hospitals and dispensaries of the province for a series of years, and it is very desirable that the facts regarding all these should be noted in Annual Sanitary Reports so far as they are available. There seems no doubt, however, that the year 1892 in Bengal was singularly unhealthy. Improved registration is to be credited with some part of the increase in the recorded mortality, but by no means with all or even the greater part of it. The general opinion of the district medical officers was that the year was decidedly unhealthy, and this opinion is shared by the Sanitary Commissioner.

* No 6, Sanitary, dated 28th February 1894.

2. *Causes of Unhealthiness.*—But when we come to ask what were the causes to which this greater unhealthiness is to be ascribed, we are at once struck by the small extent of our knowledge in regard to the various factors which are at work in determining the character of individual years in this most important matter of the public health, and also in regard to the proportion of the results which is to be accounted for by each of these factors. As we have frequently observed, two of the most powerful of them seem to be the meteorology and the food supply, and on both of these some information is given in this Report. At page 7 there is a summary of the principal meteorological features of the year, opposite page 17 is a map showing the rainfall, and in Appendix II. there is a comparative statement of the mortuary and meteorological statistics of the different districts, together with the prices current of the chief food grains for 1892 and the five previous years. As regards food the evidence is very distinct. Prices were very high, and this condition is decidedly unfavourable to the public health. Over all the districts the general tendency is to show a gradual but decided rise in the cost of the main articles of food since 1887, and a very marked increase in 1892 as compared with its predecessor. The Sanitary Commissioner also observes that the conditions as regards the meteorology were “such as to be decidedly unfavourable to health during the year “under report,” but this remark seems to require further elucidation. The whole subject is confessedly one of great difficulty, and the tabular statements containing the figures connected with it are necessarily very complicated. Moreover, even when the deductions which the facts of one year would seem to warrant appear to be very plain, they seem to be contradicted by the facts of another year. It is evident that to be really useful the data contained in this statement ought to be given month by month, so that more exact comparison may be made between the extent of sickness and the causes with which it seems to be connected. Under any circumstances, a careful examination of this kind is a matter of much difficulty, and the difficulties are further augmented by the large extent of country which Bengal comprises and by the varying conditions which exist in different parts of it. Any attempt in this way to analyse fully the annual facts over the whole province would take up too much time and divert the Sanitary Commissioner's attention from more practical matters, but it is very desirable that there should be a more extended effort in every province to utilise the facts recorded, in the hope that in time more light may be thrown on the causes which differentiate an unhealthy from a healthy year. As the province presents the question on too large and complicated a scale, certain districts in each might be selected for the purpose, and results as regards health worked out in connection with meteorology and food prices, care being taken at the same time to consider any other conditions that deserve notice.

3. *Registration of Births.*—As the census figures of 1891 had not been published when this Report was written, the Sanitary Commissioner was not yet able to use them for a full examination of the birth and death statistics in municipalities during the ten-year period 1881 to 1890, as we suggested in our Memorandum on the Bengal Sanitary Report for 1891. Unfortunately, it is only in the municipalities that this check can be employed, as the births were registered in them only, but with 1892 a more extensive record has been commenced, and the population among whom the births are registered is the same as that among whom the deaths have for years been registered. We are glad to observe that this extension, coincident as it has been with making over the work of registration entirely to the police, has been attended with considerable improvement, and the total result is an average birth-rate for the province of 28·15 per 1,000, as compared with only 21·46 in the municipality during 1891. This so far is satisfactory as an instalment of greater accuracy. Full details for each registering circle are given in Table I. of Appendix I. From this table we learn that there are 703 of these registering circles, 558 of these being rural circles, and the remaining 145 towns. We observe that a few of these last contain much fewer than 5,000 inhabitants, which was, we understand, the limit decided on to distinguish between town and country areas. For the sake of uniformity and proper comparison of the statistics of the various provinces, it is desirable that some such limit should be adhered to. Considering the population, the number of registering circles in Bengal is small compared with that of some of the other provinces. In the North-Western Provinces and Oudh, with about five-sevenths of the Bengal population, the number is 1,128, and in the Punjab, with only two-sevenths, it is 445. In dealing with the statistics of different provinces it is of some importance to recognise the size and population of each circle, as one of the elements likely to affect the results, as *ceteris paribus* the difficulties are doubtless increased the larger they are. Such arrangements must, however, to a large extent be governed by local conditions, and we merely, therefore, draw attention to the fact.

4. *Suggestions for Improvement.*—It would be easy to point out that, though there has been a gratifying improvement in the registration of births as a whole, the details as supplied in Form I. show how much has still to be done to secure even fairly accurate returns. But our object is not so much to point out flagrant errors, which are already well known to the authorities, as to suggest means of improvement for the future. The revised form, by giving the figures for every registering circle separately, should prove very valuable for the purpose, as it shows how the district and provincial averages are made up, and points out where there is evident neglect which requires attention. In our Memorandum on the 1891 Report we suggested a diagram, such as has been long employed in Bombay, to illustrate the various grades of birth and death registration, and we observe that in its orders on this Report the Government of India has forwarded this suggestion to Bengal for opinion. Whatever system is adopted, what is clearly wanted is that prominent attention should be drawn to manifest defects. It is not enough to enter the figures in a diagram or tabular statement. They must be impressed on the district and other officers concerned. To take an example from this Report for 1892, it should be shown that the birth-rate in the Patna district ranges between 13 and 35 per 1,000, and that in every one of its 18 circles the number of births recorded is evidently more or less short of the

truth. The average for the district is only 27, or not much more in all likelihood than one-half of what it is in reality. In the same district the proportion of male to female births varies from 76 to 115. The Sanitary Commissioner cannot do more than point out very clearly evident inaccuracies, and trust the local authorities to remedy them.

5. *Registration of Death.*—The same remarks apply in great degree to the registration of deaths. The details of Form No. II. of Appendix I., giving as they do particulars regarding each registering circle, invite much the same comments as the details regarding the births given in Form No. I. There is evidence of some improvement, but it must be remembered that the registration of deaths has been in force for years, and it is under these circumstances disappointing to find so many entries that are manifestly incorrect. Until the details for the circles were furnished it was impossible to say how far the statistics had even the appearance of accuracy; and now that they are furnished it is highly important to use the valuable information they contain as a means for obtaining better results. For example, it is not creditable that the rural circle of Serampore, in the Hooghly district, should return a death rate of only 5.58 for 1892, and an average death-rate during the last five years of only 6.45. It would be very creditable, no doubt, if it were true, but we know it cannot be true under any circumstances, much less when we read, as we do in the sanitary estimate of towns and villages, that the “drainage flows towards *bils* and swamps,” and that the water-supply is from tanks, “most of which contain bad water.” With the registration in such a state little progress can be expected, and the first step towards reforming their insanitary surroundings is to realise what their actual death-rate is. Many other examples of a like kind might be cited, but it is sufficient to draw attention to one. It is for the local authorities to examine all their circles one by one, with great care, and not rest satisfied with district averages. Before considering the chief diseases to which the mortality of the year is attributed, and the local conditions noted in connection with them, we may here tabulate the figures under each head for the Province of Bengal as a whole.

Causes of Death in Bengal during 1892.

Population by Census of 1891 = 70,388,083.

Causes of Deaths.	Number of Deaths registered.	Ratio per 1,000.	
		1892.	1891.
Cholera - - - - -	259,398	3.68	3.26
Small-pox - - - - -	22,359	.31	.23
Fevers - - - - -	1,607,716	22.84	18.94
Dysentery and diarrhoea - - - - -	48,491	.68	.61
Injuries : suicide - - - - -	3,078	—	—
" wounds and accidents - - - - -	14,255	—	—
" snake-bite or wild animals - - - - -	10,371	—	—
Total injuries - - - - -	27,704	.39	.41
All other causes - - - - -	281,607	4.00	3.47
Total from all causes - - - - -	2,247,275	31.92	26.94

These figures set forth very clearly the great mortality of 1892, even when compared with the unhealthy year that immediately preceded it. It is of interest to note how far the death-rates under each head compare with those of other provinces. In respect of cholera, five of the total of 11 show a higher mortality than Bengal, and four a higher mortality from small-pox. The fever-rate of Bengal is second highest on the list, but it falls far short of 34.83, the fever death-rate of the Punjab. The total mortality from all causes stands thus:—Punjab, 49; North-West Provinces and Oudh, 34; Central Provinces, 34; Assam, 34; Bombay, 32; Bengal, 31. The others have lower rates.

6. *History of Chief Diseases: Cholera.*—As we have already remarked, the year was one of very great cholera prevalence. In 1891 there had been a severe and wide spread epidemic; but in 1892, making due allowance for the increase dependent on improved registration, the disease would seem to have caused more deaths than it did in 1891. The Sanitary Commissioner says that “it prevailed “epidemicallly in 192 registering circles against 159 in 1891, severely in 160 against 138, with slight “severity in 334 against 382, and was absent from 17 against 13 in 1891.” The epidemic is ascribed to the drought in the early months of the year, the abnormally high temperature, and the progressive deterioration of the water-supply. “Coincidentally with the breaking of the rains and the consequent cleansing and replenishing of the sources of drinking water, cholera began to abate.” This is the usual course of events in the Lower Provinces, but the fact which has been so frequently pointed out must not be lost sight of, that in Upper India the very reverse order of things frequently obtains and cholera is prevalent during the rains. Some of the worst epidemics in this part of India have occurred in rainy seasons which have been distinguished by an unusually heavy fall. In Bengal it was on the districts of the Orissa Division that the severity of the 1892 epidemic chiefly fell. They had suffered comparatively little in 1891. In the eastern districts on the other hand, and more particularly in Dinajpur, Rangpur, and Jalpaiguri, the experience was just the reverse, for these places suffered much in 1891 and but little in 1892. It will be remembered that in the Bengal Sanitary Report for 1891 one of the chief factors in producing the destructive cholera epidemic of that year was said to have been the great Ardhodya Jog fair. In our memorandum on that report we gave our reasons for doubting this conclusion, and the experience of 1892 affords additional and very strong

grounds in support of what we then wrote, for in 1892 there was no such fair to which the results can be ascribed, and yet the cholera of that year was even worse than it had been in 1891. The extracts from the Civil Surgeon's reports which are cited show that in not a few instances the cholera was attributed to importation by human intercourse, but the evidence adduced is vague and unsatisfactory. The Civil Surgeon of Birbhum, for example, says that the outbreak in that town in May was traced to a man who came from the Sonthal Pergunnahs and died from cholera; that he had bathed in a tank, and that soon afterwards several others were attacked and in all 25 died, but many more exact details are wanted before such an explanation could be accepted, especially as we find from Annual Form No. VII. that in other parts of the Birbhum district nearly 1,000 deaths from cholera had been reported before the occurrence in the town of Birbhum could have taken place. There was no need, therefore, to import the disease all the way from the Sonthal Pergunnahs, for it was already present in the immediate vicinity, and before the year closed 348 villages of this district had been attacked, though it is worthy of notice, as evidence of the remarkable localization of the disease, that the great mass of the villages, numbering 3,330 in all, escaped. It is very right and proper that Civil Surgeons and others should investigate all phases of the cholera question, but to be of any value the evidence must be complete and accurate, and as a matter of practical sanitation likely to lead to good results it is very much easier to search for the local conditions which produce or favour the disease, than to search for the individual who is believed to have brought the disease.

7. *Small-pox and Vaccination.*—The deaths from small-pox were much more numerous than in any of the other years for which statistics are given. These statistics being with 1882 and range between a maximum of 18,533 in 1884, and a minimum of 4,049 in 1886. In 1892 the number was 22,359. It was, however, only in the districts of Puri, Cuttack, Lohardaga, Dacca, and Hazaribagh that the mortality from this cause was high. The maximum was 2·34 per 1,000 in the district of Puri. Among the towns Lohardaga leads the way with a ratio of 7·17. The Vaccination Report is for the three years, 1890–91, 1891–92, and 1892–93, and it notes as the distinguishing feature in the last of these years that the contemplated change in the administration of the department had been carried out, and that the civil surgeons had become superintendents of vaccination in their respective districts. It is too early to judge of the working of the new scheme. The district returns disclose very marked differences which cannot be explained. The general result for the province is an increase in the number of vaccinations performed, which for 1892–93 stands at 1,836,411. At page 4 of this vaccination report an interesting and important statement is given showing what the births in each district would be if taken at 40 per 1,000, and how many successful vaccinations were performed among infants under one year of age. Allowing a certain proportion as being from death or sickness not available for operation, it proceeds to show what ratio per 1,000 of those who were available had, according to the returns, been actually protected by successful vaccination. The district ratios framed on this basis vary from a maximum of 544 per 1,000 for Darjeeling to a minimum of only 6 for Puri. The statistics so tabulated are of great practical value and ought to be studied by all the local authorities, for the protection of the infant population is the first duty of the Vaccination Department. Re-vaccination is no doubt very desirable at later ages, but the primary portion of the work is that which should call forth the greatest exertions. In our memorandum on the Bengal Sanitary Report for 1890 we drew attention to the confusion which seemed to exist in using the terms “re-vaccination” and “secondary vaccination,” and we observe the same confusion in this Report as, for example, in statement No. 1, in which a number of infants under one year of age are entered as having been successfully “re-vaccinated,” which is not possible if the term were used in the sense in which it was intended. As regards the inspections of the vaccinations by the civil surgeons and other superior officers, which is so essential for verifying results, and also on the evidence forthcoming in this Report on the amount of protection from small-pox which vaccination has conferred on the people, we have nothing to add to what has been already said on these points by the Local Government.

8. *Fevers.*—As already shown, the deaths recorded under the head of fever amounted to more than two-thirds of the total mortality, 22·84 out of 31·92. The main causes of this great and apparently increasing loss of life are, in the Sanitary Commissioner's opinion, want of drainage and bad water. In some districts the rate was excessively high, as for example in Rajshahi, where it attained a maximum of 37·13. In the 16 districts which suffered most it is worthy of notice that almost without exception there is evidence of decided increase of fever in late years. Unfortunately the prevalence is associated with great structural changes, such as rivers altering their course, which present very difficult and expensive problems, but, according to the Sanitary Commissioner, these evils would seem to be aggravated by railways and roads, in the construction of which sufficient waterway has not been provided. Further inquiry on this important matter is very desirable. If we turn to the record of the towns, as shown in Annual Form No. VI., we find how largely fevers contribute in every one of them to the deaths of the year. In a good many of them from this cause alone they equalled more than 30 per 1,000 in 1892, and in one reached to nearly 50. In comparing such figures, however, it must be borne in mind that they are to be accepted with much reserve, as deaths which in one place would be returned under the head of “fevers,” in another place appear under another disease, or swell the ratio of mortality under “all other causes.” Under the last heading the variations are very marked.

9. *Sanitary Defects.*—The tabular statement which forms Appendix V. deals with the sanitary defects to which fever and other diseases in towns and rural circles seem to be due. As such it is of great value, for even when the state of things is much the same as it was in the previous year, the evils still existing should be brought to notice unceasingly until they have been removed. The defects are tabulated under the three great heads of water-supply, drainage, and conservancy, and further

details are given regarding ten towns inspected and reported on by the Sanitary Commissioner. The defects are very patent, but the means of remedying them are less clear. In the towns the difficulties are more easily overcome, but the towns hold but a small part of the population of Bengal. We have therefore read the officiating Lieutenant-Governor's remarks on rural sanitation in that province with much interest. As his honour observes, "The sanitary question in Bengal in its various phases of silting up deltaic rivers, obstructed drainage, uncleanly towns, and unhealthy villages, is the pressing question of the day, and the solution will not grow easier by being postponed." The very large and difficult question of general drainage is to be separately considered, and in regard to the improvement of local conditions within the villages themselves, so that they may be provided with pure water and kept in a cleanly state, it is suggested that village unions should be formed, and public criticism is invited as to the best means by which the needful funds may be raised for the proper working of these unions. Although no definite conclusions have been formed, and no decided plan of action decided on in these orders, we regard them as marking a new departure in the village sanitation of Bengal, where little has hitherto been done in this direction, no doubt in great measure because the difficulties of dealing with it in this province are greater even than they are in other parts of India.

10. *Sanitary Works*.—The statement, which is devoted to a record of the improvements effected during the year, divides them into those which were executed in the interior of the district and in the towns, and in regard to these last there is also another statement (page 43), to show what proportion of the income of each was expended on original sanitary works, how much on sanitary works of an annually recurring nature, and how much on other items. Although no great works of either water-supply or drainage were executed during the year, and though the total expenditure on sanitary improvements is very small, especially when compared with the great needs of Bengal in this respect, there is evidence that a decided desire for such improvements had been awakened. Surveying instruments, which were hired out by the Sanitary Board so as to encourage local bodies in their designs and save the cost of purchasing them, were so much in demand that further sets had to be obtained. Numerous projects were formed and rough estimates made. Surveys in various stages of progress were numerous; so numerous in fact were applications for such surveys that it was found necessary to issue orders to bring them under greater control. The report for 1893 will, it is hoped, show much work actually accomplished as the result of all these preliminary proceedings. It would add very much to the value of the Annual Sanitary Report if the Sanitary Engineer were to submit with it a brief memorandum showing what he had been able to accomplish during the year. We observe that the Government of India in its orders on this report for 1892 has drawn attention to this point.

11. *Sanitary Board*.—Although the Sanitary Board held only one formal meeting during the year, much good work was done, as may be seen on reference to their proceedings and circulars as recorded in Appendix VII. No change was made in the constitution of the Board, but we observe, in the orders already referred to, that it is proposed if any large plan of rural sanitation be undertaken, such as has been suggested, that its constitution should be broadened and brought more into touch with local bodies.

12. *Calcutta Port Health Officer's Report*.—The report of the Health Officer of the port of Calcutta, which forms the last Appendix, contains interesting particulars regarding the sailors, both European and Native. The only point in it to which we wish to refer relates to the pilgrim traffic to the Red Sea. It is very desirable, with reference to the continued allegations that pilgrims from Indian ports take cholera to Jeddah and so on to Mecca, that as much information as possible regarding them should be systematically collected and placed on record. With this object we would suggest that statistics should be given every year in the report of the Health Officer of every Indian port, showing the names and other particulars of all pilgrim ships, the number of pilgrims in each, and the general state of their health on departure. This should be followed up by a medical history of the voyage, showing the number and dates of all cases of cholera that may have occurred, and if in addition a record could also be obtained of the number of pilgrims who return to India after the pilgrimage is over, very valuable data might in time be collected. We propose to discuss this subject more fully in connection with the Annual Sanitary Report for Bombay, at which port the great mass of the pilgrims for Mecca embark.

8th June 1894.

No. 3.

MEMORANDUM by the ARMY SANITARY COMMISSION on the REPORT of the SANITARY COMMISSIONER of the NORTH-WESTERN PROVINCES and OUDH for 1892.

1. *Signs of Sanitary Progress*.—This Report is interesting, and in many respects encouraging, for it shows that real progress is being made in sanitary matters, as indicated by the attention devoted to the registration of births and deaths among the people, and by the endeavours which are being made to improve the local conditions of the towns and villages in which they live. When we consider that the population of the United Provinces amounts to 46,905,085, that they cover an area of nearly 109,000 square miles, and contain 105,283 villages, besides 101 towns varying in size from a minimum of about 10,000 inhabitants to the maximum of nearly 250,000 in the one city of

Lucknow, some idea may be formed of the magnitude of the task which has been undertaken, more especially when we bear in mind that the agency by which the work has to be done is necessarily so weak in numbers, and in all but its higher grades so ignorant and illiterate, and, moreover, that the time-honoured habits and prejudices of the people are, nearly all of them, diametrically opposed to the reforms which it is desired to introduce. Under such circumstances progress must be slow, and, indeed from some points of view, it is desirable that it should be slow. If it is slow, it is all the more likely to be sure, provided it is based on sound practical principles. All we can usefully endeavour to do in our memoranda on the Sanitary Reports is to inculcate such sound principles or to point out any instance in which there seems to have been a deviation from them, to note where the information given appears defective, and to propose means for rendering it more complete in the future, and we are glad to note that the suggestions which we have made on such matters have in many instances been acted on. Such remarks apply more or less to all parts of India, but they are specially applicable to such a large area and vast population as are embraced under the Government of the North-West Provinces and Oudh.

2. *Registration of Vital Statistics.*—As regards the registration of births and deaths some of the remarks made in our memorandum on the Sanitary Report for 1891 apply equally to this report for 1892. The results for this year have been carefully analysed by the Sanitary Commissioner, and much attention is evidently devoted to this important work, which is confessedly carried on under very great difficulties. It is desirable, however, to recur to the subject of the inspection of the primary registers by the various officers of the Government on their tours, and more particularly by the civil surgeons and by the vaccinators who are so directly interested in ascertaining the correct data regarding births and also regarding all deaths from small-pox. A good beginning has been made in both these directions. In paragraph 51 a table is given showing the results of the tests of the accuracy of birth and death registration by certain revenue and other officers, but we observe that only those districts, 19 in all, are included "from which the returns are approximately accurate." It is desirable that in such a table all the districts should find a place, as the object in view is not so much to illustrate the degree of accuracy attained as to discover the places in which there is manifest inaccuracy, and where the registration therefore needs more attention. In the next place, the Deputy Sanitary Commissioners in their reports which are appended to that of the Sanitary Commissioner might give much interesting and useful information on what their experience was in inspecting the registers. A few examples of what they found by such local examination, and what was the nature of the prevailing errors, whether they were merely errors of omission or were in any way fictitious. All such information would be of service in administration, and would also throw light on the general condition of the registration throughout the country. The reports of the Deputy Sanitary Commissioners at present add very little to our knowledge of what this condition is. The report of the deputy of the First Circle makes no mention of the registration. In the Second Circle the deputy remarks as the result of his inspection of a number of towns, thanas, and villages, that "as a rule the matter is well attended to." The remarks of The Deputy Sanitary Commissioner of the Third Circle are also of a general character. The birth and death registers of 1,600 chaukidars had been examined; "they appear to be more carefully kept than in former years, although still far from being accurately so."

3. *Registration of Births.*—There is another and valuable check which the Sanitary Commissioner can exercise on the registration returns, and that is a careful examination of the units of which the various district averages are composed. In some of the smaller provinces the instructions of the Government of India, which were evidently directed towards the attainment of such a comparison, have been carried out, and in Forms I. and II. the results of the registration in each circle are given one by one. In the North-West Provinces, where there are 1,128 such circles, this could hardly be done without inconvenience, but the same practical object would be in a great measure gained if the Sanitary Commissioner were to show for each district the highest and the lowest rate recorded among the different circles. As regards births, especially, such a comparison of the extremes would show at once where the registration seemed to be faulty, and local inquiry was needed. Even if we take the average rates for districts, which is a much less searching test than the ratios of the circle units, the discrepancies in the birth-rates are very remarkable, varying as they do between 20 in Dehra Dun and 46 in Moradabad. The low birth-rate in Dehra Dun would seem by Table No. I. to be accountable to some extent at least by the smaller proportion than ordinary in the number of women, but the large percentage of males among the births (115) is another indication of error which is not to be explained in this way. At the same time it is to be noted that four other districts, where the birth-rate is much more correct than that recorded in the Dehra district, return even a higher percentage of male births than Dehra does. In 14 of the 48 districts the deaths exceeded the births, the highest excesses being 22 per 1,000 in Dehra and 24 in Naini Tal, where, however, the population is to a large extent migratory, and therefore likely to yield abnormal results. All the evidence points to much neglect of registration in the district of Dehra, a fact which is well known to all the authorities and has been repeatedly commented on by them. The great fluctuations in the birth-rates of the town are shown in the last statement appended to the report. The town rate, as a whole, averages 34, but this is made up of ratios from 13 to 51 in individual places. We observe that the question of tabulating the birth-rate in every circle, and communicating the results to municipal and district boards, was under consideration.

4. *Registration of Deaths.*—Interesting statements have been given to show the population in the different districts according to the Censuses of 1881 and 1891, as compared with that deduced from the birth and death registration during that ten-year period, and, as we have before remarked

the general confirmation of the registration figures which such a comparison supplies is gratifying. When the report was written the report of the Census Commissioner on the census of 1891 had not been published, and the Sanitary Commissioner has therefore deferred any extended criticism of the figures in their bearing on matters connected with the public health for another year. We proceed, therefore, to consider the record of deaths for 1892. The main facts are that these were more numerous than usual, and that the chief cause of the increase was an epidemic of cholera. The details are fully stated in the Report, but we may note here how the total mortality of 34.11 per 1,000 was made up. It stands thus :—

Cholera	-	-	-	-	-	-	-	-	-	4.15
Small-pox	-	-	-	-	-	-	-	-	-	.16
Fevers	-	-	-	-	-	-	-	-	-	24.90
Dysentery and Diarrhoea	-	-	-	-	-	-	-	-	-	.90
Injuries	-	-	-	-	-	-	-	-	-	.53
All other causes	-	-	-	-	-	-	-	-	-	3.46
Total	-	-	-	-	-	-	-	-	-	34.11

These are the results for the province as a whole, but great extremes are to be found in different districts, and, if the comparison be extended to registration units, even more striking fluctuations become apparent. These may be seen in the tabular statement which occupies pages 37 to 44 of the Report. It is not necessary to recapitulate figures which have been already shown in the Sanitary Commissioner's review, whether as regards the maxima and minima in towns and country districts, the mortality by sex or age or season, but we may draw attention to one satisfactory result, and that is that, with an increase of the total death-rate over the province for the year, the death-rate in the towns had considerably decreased. This very gratifying fact is attributed to the lesser hold which cholera was able to get over the towns compared with the country districts. The Sanitary Commissioner remarks that "extensive sanitary works are undoubtedly effecting a marked change for the good in the health of the urban areas." We have no doubt that this improvement will become more and more apparent as these works extend. These sanitary works are fairly to be credited with the reduction of the town deaths from those of former years, but the results for 1892 as a whole do not altogether bear out the Sanitary Commissioner's conclusion, for although the mortality from cholera in the towns was only 1.99, compared with 4.31 in the rural tracts, there was very little difference between the two if all the causes of death are taken into account, and that difference was adverse to the towns, the ratios being 34.06 for the country and 34.78 for the towns. Such comparisons, when instituted over large areas, are always more or less subject to fallacies, and would be more valuable if confined on the one hand to towns in which great sanitary improvements have been effected of late years, and on the other to those where such improvements have not yet been carried out. There is only one other point in regard to the general question of the mortality to which we need refer, and that is "the verification of the causes of death during 1892 by the medical officers of districts and other medical men." The results of this verification are contained in four statements in which the deaths from the various diseases entered are arranged according to month and age. The distribution of these deaths by districts would have been a valuable addition to the record. The general conclusion arrived at is that "the excessive percentages of mortality from malarial fever disappear when proper tests are adopted and accurate diagnosis ensured." There can be very little doubt that this is correct, and it has long been recognised that a large number of the deaths recorded under the general head of "fever" might with greater accuracy have been entered under some other head, but there was, first of all, the difficulty of diagnosis, there being no one on the spot capable of pronouncing what the disease really was, and secondly, there was the other difficulty that in the very simple form of return designed for the use of people altogether ignorant of medical matters there was no place in which the correct entry could be made. So far every one acquainted with the subject must agree with the Sanitary Commissioner that, as regards the causes of deaths, and more particularly as regards the deaths attributed to *fever*, no great dependence is to be placed on the registration, but, as we have frequently remarked, nothing better can be had at present, nor can much improvement be expected for years to come. But for all practical purposes the existing returns afford an excellent basis for sanitary work, for the mere fact of a high death-rate is sufficient evidence to show the necessity for improving local conditions. We observe that the Sanitary Commissioner draws another conclusion from these verification returns, and that is "that infectious disease exists to a greater or less extent among the Native population, and that many of the *fevers* are infectious in their nature, and not of malarious origin as frequently supposed," but we can discover very little in the figures to support this opinion.

5. *History of the Chief Diseases: Cholera.*—Of the chief diseases which form the headings of the mortuary statistics there are only two in regard to which we need offer any remarks, and these are cholera and small-pox. The cholera epidemic was very severe, and the deaths it occasioned fell but little short of the maximum they attained in 1887. There are some circumstances in the cholera history of the year as compared with that of its predecessor which deserve attention. In 1891 the deaths numbered 169,013, or 3.60 per 1,000. Of these there occurred in the four upper divisions of the province (Kumaon, Rohilkhand, Meerut, and Agra) 79 during January, 498 during February, and 292 during March. The Kumb fair at Hurdwar was held that year early in April. The great bathing day was on the 12th of that month. All passed off well. There were one or two suspicious cases but no outbreak of cholera at the fair or among the pilgrims as they dispersed to their homes. This happy result was attributed to the excellent sanitary arrangements, and there seemed, indeed,

every reason for congratulation. The appearance of the disease in the earlier part of the year, before the fair was held, especially in some of the districts near Hurdwar, and its prevalence in the district of Kumaon, which is not far distant, naturally led to grave apprehensions, but these forebodings were not realised. In 1892 the general mortality from cholera throughout the United Provinces was even higher than it had been in 1891. The deaths numbered 194,866, or in the ratio of 4·15 per 1,000. In the four divisions above named, before the fair commenced, the disease had not been prevalent in any part. The deaths in them were only 17 for January, 12 for February, and 122 for March, a great contrast to the same months in 1891, but although the same care was exercised in the sanitary arrangements, as in the year previous, cholera broke out at the fair in the end of March, and the dispersed pilgrims suffered severely. In the one year the efforts appeared to have been successful, in the other they altogether failed. This failure is attributed to the fact that "the sending of a constant stream of fresh water all through the bathing pool, which removed all impurities very quickly, was less effectively applied than in the former year." There was a smaller volume of water in the river, and the current was obstructed by impediments which it is noted have since been removed. It is important that this and every defect should be remedied, so that all the arrangements may be as perfect as possible, but we can hardly believe that the marked difference in the results of the two years is to be so explained because it will be remembered that specimens of the water from the bathing pool in 1891 on examination were declared to be teeming with what were pronounced to be cholera bacilli. It does not seem probable that they were really germs capable of producing cholera for, as already mentioned, the disease was limited, if it existed at all, to one or two suspicious cases. But the evidence is important as showing that the water in 1891, notwithstanding the more rapid flow, was still loaded with impurities. It seems very clear that in both years great and widely operating causes were at work, for if we compare the deaths from cholera in the first half of each of the two years we find ample evidence to this effect. The figures stand thus:—

	January.	February.	March.	April.	May.	June.
1891	718	1,115	2,077	18,273	31,915	34,453
1892	949	697	3,437	31,913	58,087	39,066

In both years there is the same sudden rise in April and a further increase in May. In the one year there were no cholera stricken pilgrims, in the other year there were; but the general course of the epidemic is much the same in both. Those who regard pilgrims as the great means of disseminating cholera should study the facts, and compare the years in which great epidemics seemed to be caused by pilgrims with other years in which severe epidemics occurred without any outbreaks at the great fairs which could be adduced to account for them. They should also remember that the influence of pilgrims in disseminating cholera merely resolves itself into the general question of contagion as the means by which the disease is spread. There is no *bacillus* or other germ peculiar to a pilgrim. He can produce no other special germ, if there is any germ at all, than any other individual suffering from cholera can produce, so that the effect of pilgrimages on cholera distribution must be judged in the light of all the facts bearing on contagion in relation to cholera. Of the impossibility of explaining the facts on any such hypothesis the history of the cholera in the North-West Provinces and Oudh during 1892 affords renewed evidence. It is only necessary to look at the statistics of the disease month by month in each district, or to examine the very clear cholera map given in the Report, to see how inadequate any theory of this kind is to account for the results. We see some great cause operating more or less over the whole province, and distinguishing the year as one of great epidemic activity; we see some areas suffering greatly, several of these being parts of the country least open to traffic, and through which the means of communication are comparatively scant; we see other parts to which and through which the traffic is great and constant, suffering but little, and throughout all the districts, whether those that suffer most or those which suffer least, we have the same evidence of localization—the same remarkable immunity of the greater number of the villages they contain. These considerations are not merely of theoretic or academic interest, they lie at the basis of all sound sanitary work. Any arrangements for the suppression of cholera which are based on endeavours to prevent personal contagion must end in failure, especially in a country like India where such arrangements are simply impossible. The only refuge is to be found in sanitary improvements, especially in securing a good wholesome water supply, and we are glad to see that in the North-West Provinces all the authorities concerned are fully alive to the importance of such improvements, and that in the towns, as we have mentioned in a previous paragraph, there is evidence that good results have already been effected by this means, that with sanitary improvements there has been a reduction of cholera mortality. It is impossible, in the present state of our knowledge, to say why cholera attacked the Hurdwar fair in 1892 any more than it is to say why, under, to all appearance, much more threatening circumstances, it did not attack the Hurdwar fair in 1891. We can no more explain this than we can explain why one village suffers while others around it, with free communication, escape. The great facts we know about cholera are its remarkable localisation, and that the best and only means of preparing for any such localisation is to have every sanitary improvement carried out in case such localisation should take place.

6. *Small-pox and Vaccination.*—We have said so much in regard to cholera that we must confine ourselves to a very brief comment on the returns of small-pox and vaccination. The information given under this head is, as a whole, very satisfactory. The mortality from small-pox was less than it had been in any previous year, and the ratio of 1·6 bears favourable comparison with that of 3 or even

4·5 per 1,000 recorded formerly. The detailed statements relating to towns and districts show that the Sanitary Commissioner has his eye on the localities where the disease prevailed. In a few of each there are high ratios, Gorakhpur heading the districts with 0·64 deaths from small-pox per 1,000 and the town of Pilibhit with a maximum of 2·19. The work of vaccination has continued with remarkable activity. The total number of persons operated on, the number of these operations which were successful, and the proportion of infants protected by this means, are all indicative of progress. This progress is all the more marked when the results of 1892-93 are placed side by side with those of earlier years. In 1881-82 the total number of persons successfully vaccinated was 684,026, whereas in 1892-93 it was 945,364. The statistics of infant vaccination also represent a large increase, but even with this large increase the proportion of these successful vaccinations to the total births of the year, after due allowance has been made for deaths, occurring among the children before they could be vaccinated, shows that a large field still remains to be occupied. The Sanitary Commissioner very properly insists on the value of the vaccination, but there can be little question that the great aim of the Vaccination Department should be in the first place to overtake the infants every year, and that until this is accomplished other work, however valuable, should be regarded as of minor importance. In illustration of the effects of vaccination on small-pox, a statement is given in which the number of successful primary operations and the deaths from small-pox in each district of the North-West Provinces and Oudh are compared for a series of 10 years. This statement would be still more useful if the results were shown in ratios as well as actuals. The actuals answer very well for the comparison of different years in the same district, but until they have been worked into ratios they are not of much use for comparing one district with another. No doubt the preparation of such a statement involves considerable labour to start with, and it would year by year take up a good deal of space; but it is well worth all the trouble it may involve, for it ought to be the sheet anchor on which the Department should mainly rely. The record of the large and increasing number of successful vaccinations and other data, all telling of much excellent work done, is most satisfactory, but the only real test of its excellence is the influence it has had in the diminution of small-pox. We believe that much good has been done in this direction, but the more this is clearly put in evidence, district by district and town by town, the better, not only as proof of good results obtained in the past, but as the best basis for securing the hearty co-operation of the people themselves.

7. *Sanitary Defects and Improvements.*—Appendix B. presents a *resume* of the local conditions affecting the health of the people in nearly 300 municipal cities and towns (under Act XX.). The high death-rates recorded in many of them are in themselves ample evidence of the defects in these conditions, while the particulars noted under the heads of "Drainage," "Water-supply," and "Conservancy," show in what these defects mainly consist. We shall not quote any illustrations of the necessity for reforms, because we are well aware that the Government of the North-West Provinces and the local authorities are well acquainted with the facts, and fully alive to the importance of dealing with them to the utmost of their ability, but we would emphasize the great value of a statement of this kind, so that the Sanitary Commissioner, and all other authorities concerned, may keep before them a simple and yet striking reminder of the enormous amount of work to be done. Much has been already accomplished, and it is satisfactory to find in this Report that the activity which has specially characterized the later years in this part of India continued in 1892. Following the Agra and Allahabad waterworks, which were completed in 1890 and 1891, those at Benares were opened in the year of report, and among other great works commenced are the drainage and sewerage of Benares and a water supply for Cawnpore and Lucknow. At Naini Tal a system of drainage and sewerage was near completion, and similar measures of reform for other important places were under consideration. The account of minor improvements undertaken in other parts makes up a satisfactory record of the year's work.

8. *The Sanitary Board.*—The Sanitary Board remained unchanged, but owing, it would seem, to the fact that it possesses no executive authority, the results so far have not been altogether satisfactory, and its reconstitution was being considered. On many important matters it advised during the year, and the outcome of one of these is the Village Sanitation Act of 1892, copy of which is appended to the Report. Projects for the improvement of drainage in certain districts, and especially in those in which the need for such improvement was most pressing, for improving the vital statistics, and also the best means for giving practical effect to the Village Sanitation Act, engaged their attention, all matters on which the further progress of sanitary reforms in the province largely depends.

8th June 1894.

No. 4.

MEMORANDUM by the ARMY SANITARY COMMISSION on the REPORT of the SANITARY COMMISSIONER of the PUNJAB for 1892.

1. *The most unhealthy Year on record.*—This report is the history of a terribly unhealthy year. In 1890 there had been unusual sickness in the province, and the mortality equalled the very high rate of 46·87 per 1,000. In 1891 there was a remarkable improvement and the ratio fell to 29·13. But in 1892 the state of the public health has been worse even than it was in 1890, and the result is the highest death-rate that has ever been recorded in the Punjab, 49·48 per 1,000. The extraordinary

fluctuations in the annual extent of sickness and mortality among the people in eastern countries are well known to those who are conversant with Indian statistics, but they are very apt to be lost sight of by others in considering the history of diseases, and especially of epidemics. There could hardly be a more striking illustration of these fluctuations than is afforded by the experience of the Punjab during the years 1890 to 1892, as exemplified in the ratios just quoted, and as may be seen more in detail in the following statement showing the following deaths from all the chief causes which were registered in each of them. We have preferred to retain the actual numbers, because they appeal to the understanding more directly and impressively than the ratios, but we have added the ratios for 1892 in order that the component parts of the total death-rate of that year, which we are now specially considering, may be stated for future reference.

Causes of Deaths.	Number of Deaths registered.			Deaths per 1,000 in 1892.
	1890.	1891.	1892.	
Cholera - - - - -	3,401	10,107	75,959	3.70
Small-pox - - - - -	8,922	3,426	11,173	.54
Fevers - - - - -	692,511	442,254	715,890	34.83
Dysentery and diarrhœa - - - - -	17,163	12,152	21,781	1.06
Injuries - - - - -	5,689	5,882	6,547	.32
All other causes - - - - -	155,463	124,968	185,673	9.03
Total, all causes - - - - -	883,149	598,789	1,017,023	49.49

Under nearly every head the healthiness of 1891 as contrasted with the year on either side of it is very marked. The only exception, in fact, is under cholera, which was more prevalent in 1891 than it had been in the previous year, to be followed by the very severe epidemic of 1892.

2. *Births.*—The comparatively high birth-rate of 38.16 per 1,000 in 1892 is attributed in part to the healthy character of the preceding year, and partly to the efforts which had been made to secure more complete registration. Form No. I. has not been expanded as has been done in other provinces, so as to show the births recorded in each circle separately. The comparison is thus confined to districts only, nor is there any analysis in the chapter of births of the circle ratios from which the district rates are prepared. Such an analysis is very necessary as a check on registration, and also as a means of studying the distribution of the births every year more fully. In Appendix D. there is a statement showing the births and deaths registered in each of the 45 large municipal towns, and in them we find the rate fluctuated between 25 and 51. The great majority, however, return between 35 and 45 per 1,000. The proportion of males born to every 100 females is an indication of inaccuracy, especially in the frontier districts. In the Peshawur district, where this error is most marked, the proportion is 154 males to every 100 females. In all the districts the proportion of males seem abnormally high. For a province as a whole it averages 113, the lowest being 105 in the Kangra district. In the other provinces in 1892 it varied from 104 to 110. The general birth-rate for the Punjab is much the same as that of the Central Provinces, and falls little short of 39, which is returned by the Hyderabad Assigned Districts, and is the maximum for the year.

3. *Deaths.*—As already mentioned, the mortality of the year reached the very high and altogether unprecedented figure of 49.48; the deaths exceeded the births by 11.32 per 1,000. Annual Form No. II., which deals with death, is wanting in details regarding the registration circles, just as No. I. is, but this defect in regard to deaths is made up in great measure by Appendix A. in which the mortality in each district is shown by municipalities and thanas. The district ratios range between 23 at Simla and 66 in Bannu. Setting aside the first of them as probably erroneous, it is worthy of notice, as indicative of the widespread unhealthiness of the year, that of the 31 districts in the Punjab only two returned a mortality of less than 40 per 1,000. We have already shown the fluctuation in the number of deaths which are to be found over the province as a whole during different years, and we may illustrate the same truth by comparing a few of the districts taken separately.

Districts.	Number of Deaths Registered.		
	1890.	1891.	1892.
Sialkot - - - - -	103,307	37,385	68,609
Gujranwala - - - - -	53,031	21,911	33,613
Gujrat - - - - -	54,762	22,292	32,541
Mooltan - - - - -	19,441	18,814	35,003
Montgomery - - - - -	14,854	12,064	28,892
Jhang - - - - -	13,944	12,800	21,709

It will be observed that the first three were the most unhealthy in 1890, whereas the last three suffered most in 1892. An examination of the detailed death ratios in municipalities and thanas furnished in Appendix A. discloses extraordinary variations, not only in different parts of the province.)

but also in neighbouring places within the same district. The maximum and minimum death-rate in the following districts will serve as examples :—

Districts.	Maximum.	Minimum.
Hissar	87	28
Gurgaon	63	23
Delhi	81	41
Karnal	60	36
Umballa	66	26
Hoshiarpur	90	27
Jullundur	98	31
Ludhiana	64	38
Ferozepore	63	34
Montgomery	114	34

In one thana of the Mooltan district the mortality is given as 217 per 1,000, but the population is too small for statistical purposes. The very high rates for some of the others quoted above seem hardly credible. The mortality in the Punjab during 1892 far exceeds that recorded in any of the other provinces. The nearest approach to it is 34, which was the ratio for the North-West Provinces and Oudh, for the Central Provinces, and also for Assam.

4. *History of the Chief Diseases. Cholera.*—The year was distinguished by the most severe epidemic of cholera that is known in the Punjab. In 1891 there had, as has already been shown, been a considerable increase in cholera mortality as compared with the year previous. The disease appeared in April of 1891 in two of the southern districts, and after that was present more or less over nearly the whole Punjab till the end of the year; in only five of the 31 districts was no death from cholera reported. There is no question, then, as to the wide distribution of cholera over the Punjab in 1891, and in two of the frontier districts deaths from cholera were recorded as late as December of that year. One of these districts was Bannu, and here in January 1892 the epidemic still continued, and 60 deaths from it were recorded. In Kohat in February 18 were recorded, then in March a very few cases followed in 13 other districts, and in April the disease was more or less rife in every district except one on the frontier, where registration is very imperfect. In May the epidemic culminated in the death of 25,252 persons during that month alone. In June the number fell to 21,203, and then gradually subsided till in December the disease seems to have completely disappeared. Here, then, we have the summary of a great epidemic lighting up over a wide area much about the same time, and the question naturally arises, to what cause or causes is it to be attributed? The Sanitary Commissioner believes that the early and rapid distribution of the disease was due to the pilgrims returning to the Punjab from the Hurdwar fair, which, in consequence of cholera, had been broken up on the 24th March. He writes, "It thus appears that cholera made its appearance in 14 out of the 31 districts of the province within seven days of the breaking up of this Hurdwar fair, that in other four weeks the disease broke out in other 15 districts, and that, with the exception of the frontier district of Dera Ghazi Khan, the disease was present in epidemic form in every district of the province within five weeks of the time pilgrims began to leave Hurdwar." These facts, however, present nothing new in the history of cholera or different from the experience of years in which there was no movement of pilgrims coincident with and seemingly accountable for them. But the Sanitary Commissioner adds a statement showing in a number of places that the date of the first case in a pilgrim was anterior to the seizure of any of the other inhabitants. Such evidence as this, even if it could be thoroughly depended on, may merely show what is very well known already, that pilgrims in their worn-out and ill-fed condition are more prone to be attacked. But such statements must always be accepted with great reserve. Though nominally furnished by the Civil Surgeons, they must necessarily be prepared by the police, who in a matter of this kind are apt to present what best suits the views of those who are directing their inquiries. It will be observed that the statement refers to cases of cholera and not merely to deaths, and the discovery of the first case of cholera in any community, as has been shown by experience, is confessedly a matter of some difficulty, which is much increased when, as so often happens, the investigation into the facts is not made until some time after they have occurred. Evidence of the kind which the statement contains is to be had in abundance from the police, although, as already stated, the inquiry is beset with difficulties, among which not the least are the size and large population of the districts with which they are concerned. The results form a remarkable contrast to the small amount of facts of a like nature which are to be obtained from medical officers in charge of troops and jails, though the circumstances in both these instances are so favourable for investigation, and the investigation is made on the spot by those who are well able to conduct it. If the Hurdwar fair were really the cause of the early and rapid diffusion of cholera over the Punjab in 1892, it is strange that many of the districts in its immediate vicinity suffered so little. Bijnor recorded a mortality from cholera of only 2·22, Moradabad 1·09, Bareilly 2·07, Mozuffernagar ·74, and Saharanpur, in which district Hurdwar is itself situated, only ·40. It is further strange, if the pilgrims were the bearers of the Punjab epidemic, that it should have been most severe in Bannu, which of all the districts is, perhaps, the most remote from Hurdwar. Here the mortality from cholera was 11·36. It is worthy also of notice that this district, as we learn from Form No. V., is composed more exclusively of Mahommedans than any other in the province, so that its connection with the pilgrimage was in all probability of a very limited character

But the matter is of importance only in so far as it effects practical sanitary work. Even if it were proved beyond all doubt that the pilgrims were the cause of the epidemic, what is to be done? Are all fairs to be stopped, or are the people to be taught to seek security by keeping the pilgrims at a distance? To stop the fairs is hardly to be thought of. To teach the people that safety is to be found in avoiding others, and especially those that are sick, is calculated to do much harm, because it diverts their attention from those sanitary improvements which are so necessary for the public health. Nothing has done so much to check such improvements as quarantine. Countries which have trusted to the delusive protection which quarantine promises have neglected to deal with the real causes of disease existing in their midst, and have continued to suffer. The same must be the result of all teaching of a similar character to the people of India.

5. *Small-pox and Vaccination.*—There was some prevalence of small-pox, especially as compared with the remarkable abeyance of this disease in 1891, but the death-rate contributed under this head in 1892 equalled only .54 per 1,000. The district ratios varied between 4.08 in Bannu and a very small fraction in Jhang representing two deaths. What reason is there to connect these fluctuations with the amount of protection recorded as having been given to different districts by successful vaccination? This is a point which, as we have frequently remarked, ought to be very fully dealt with in either the Sanitary or Vaccination Report every year, but to be of much value as a test of the influence of vaccination in small-pox it is essential that the statistics of both vaccination and small-pox should be studied for a series of years. The average proportion of persons successfully vaccinated per 1,000 of the population in the Punjab during 1892 (33) is higher than in many of the other provinces, the maximum being 37 in Berar, but the average for the province is made up of rates varying from 11 in Hazara to 51 in Gurdaspur. In statement No. I. of the vaccination series, taken in conjunction with the small-pox mortality of 1892 as shown in annual form No. VIII., there are the materials for comparing small-pox and vaccination for six years:—

District	Mortality from Small-pox per 1,000 of Population.		Ratio per 1,000 of Population successfully vaccinated.	
	In 1892.	Average in previous Five Years.	In 1892-93.	Average in previous Five Years.
Bannu	4.08	0.77	19.42	21.46
Kohat	2.45	0.91	20.37	19.26
Umballa	1.00	0.72	20.86	19.78
Delhi	0.08	0.33	33.68	23.72
Kangra	0.03	0.08	84.46	84.48
Jhang	0.00	0.22	24.16	29.71

We have taken three districts that suffered most in 1892 and three others that suffered little, and as a whole the evidence is in favour of those where vaccination was more actively and successfully carried on, but the scrutiny ought to be extended to all the districts and also to the towns taken separately. The Lieutenant-Governor has drawn attention in his orders on the Vaccination Report to several points of much importance, such as the large proportion of re-vaccinations in the total, the great variations in the degree of success claimed for re-vaccination in different places, and the need for issuing instructions to the operators as to what constitutes success. We fear, however, that nothing but practical experience will teach the vaccinators this lesson, and no person ought to be employed as a vaccinator who has not satisfied the controlling authority that he is thoroughly acquainted with all he has to do and can actually do it.

6. *Fevers.*—Of the total deaths of the year by far the greater number were, as usual, registered under the head of fevers. From this cause the provincial death-rate equalled 34.83 per 1,000, and the district rates varied between 24 in Rohtak and 49 in Gurdaspur. In addition to the many diseases which every year swell the mortality under fevers, there was a special cause which increased the ratio in 1892, and that was a wide-spread epidemic of influenza in the first quarter of the year, which prevailed more especially in the north-western districts. It is to be regretted that more information has not been given regarding this epidemic than what is contained in the above remark. Many interesting facts might have been ascertained regarding it and placed on record for future reference. As it is, a great wave of this peculiar disease has passed over India; no province seems to have escaped, and yet when all the information regarding it which is given in the sanitary reports has been collected it amounts to very little. The fever, however, which proved so destructive to the people of the Punjab in 1892 was in the main malarial, and followed the usual seasonal course of such fevers, being most severe in the autumn and early winter.

7. *Causes of Unhealthiness.*—We have said enough to illustrate the vast differences in the public health which are to be met with in the history of an Indian province from year to year. Such vast differences are not to be explained by accidental or other trivial causes. They must be dependent on some great natural laws, and it is one important part of the duties of the Sanitary Department to endeavour to ascertain what these laws are. In two material points the meteorology of the Punjab in 1892 was abnormal. During the first half of the year the rainfall was deficient, and the water-supply in many places was thus considerably reduced. To this cause, which entailed a greater

risk of contamination in the quantity which remained for use, the prevalence of cholera is in part ascribed. The figures of monthly rainfall in 1892 and other years are not given by districts or other localities, and it is therefore impossible to estimate how far the conclusion on this point is borne out by the evidence, though it is not to be questioned that where the water-supply was rendered more foul than usual it presented an increased danger. In the later months the rainfall instead of being defective was greatly in excess, and to this the severe epidemic of fever is ascribed. The excess was mainly in the third quarter of the year, and an interesting statement is given in which the amount of rain which fell in that quarter of 1892 is compared with the average of the same quarter during the previous seven years, and the fever deaths similarly placed side by side. In nearly all cases there is a marked connection between the two—a heavy rainfall is associated with a heavy fever mortality. In five municipal towns which returned the highest mortality of the year, varying between the enormous ratios of 90 and 67 per 1,000, the Sanitary Commissioner found on inspection that they were all suffering from very defective drainage, which had been aggravated by unusual rainfall and consequent floods. In respect of food, also, the condition of the people generally was unfavourable, for, though there was nowhere anything approaching to famine, there was considerable scarcity in many places.

8. *Sanitary Defects.*—As the Sanitary Commissioner remarks the great remedy for malarial fever is drainage, and we are glad to learn that many of the schemes of improvement in this particular which were mentioned in the Report for 1891, and which will materially affect large tracts of country, were being gradually carried out. Appendix A. is a record of the local conditions of the municipalities and thanas in each district as respects drainage, water-supply, and conservancy as compared with the total death-rate of the year, and in other columns information is given regarding the amount expended on establishments for securing cleanliness, and also some account of the measures taken to remedy the evils existing in each locality. The very high death-rates recorded in nearly every locality, both town and rural, are associated in most instances with grave defects, more especially in drainage and water-supply. In some places conservancy is fairly attended to, but in many it also is in a neglected state. The statement is one which is calculated to be of much practical utility, particularly to the local authorities in each district. Now that waterworks and other improvements have been provided for several towns and other settlements in the Punjab, it would be interesting to know how far such improvements have been followed by better health among the inhabitants. Evidence of this kind ought to be forthcoming, and should afford valuable aid in commending similar reforms in other places.

It is somewhat disappointing to find from the figures cited in paragraph 21 that the introduction of a good water-supply into Peshawur had not been attended with a more marked diminution of cholera, but the facts regarding one year in a single place are not sufficient basis for forming an opinion, and it is therefore most desirable that the subject should receive attention in future reports, and that the statistics of places where improvements have been effected should be carefully analysed, so as to show what results are to be ascribed to such improvements. In all such comparisons it is very necessary, as the Sanitary Commissioner has done in the case of Peshawur, to take the facts regarding the particular locality in question in conjunction with those of the surrounding country, for all epidemics, whether of cholera, fever, or any other disease, vary in intensity, and it is therefore essential to consider not only the means of defence afforded by improvements, but also the strength of the attacking force.

9. *Sanitary Works.*—Chapter IX. shows in each district what works of any importance had been completed during the year, or were more or less on their way to being put in hand. Among these may be mentioned the general schemes of drainage designed to relieve tracts of country where water now stagnates. In addition, designs for improving the drainage of many towns, and also for improving the water-supply, had been formed, and some of them put into execution. The financial statement of the Sanitary work done in 1892 shows that more was expended on this object during that year than in the year previous. The best method of disposing of the sewage, especially of towns—a question which presents so much difficulty in all countries, and in regard to which there is so great divergence of opinion—was engaging attention, and a special report had been called for on sewage farms in the Punjab, and on the utilisation of sewage for market gardening or other agricultural purposes. We observe that in 1892 the considerable sum of Rs. 1,28,804 was realised by the sale of manure and town sweepings.

10. *Sanitary Board.*—One of the most important matters taken up by the Sanitary Board during the year was the advisability of having a special sanitary engineer added to their body, and a recommendation to that effect was accordingly submitted to the Local Government. Nothing had been decided when the report issued, but an attempt was being made to provide such an engineer. No change took place in the constitution of the Board during the year. Their proceedings are summarised in Appendix B., and embrace many important matters bearing on the health of the province. Among others, we note that a copy of rules for the registration of vital statistics had been prepared by them, and had been issued under the orders of the Government, but no particulars are given of the nature of these rules. It is very desirable that all such papers should be given in full.

8th June 1894.

No. 5.

MEMORANDUM by the ARMY SANITARY COMMISSION on the REPORT of the SANITARY COMMISSIONER of BURMA for 1892.

1. *Slight improvement in Registration.*—Much of what was said in our memoranda on the Burma Sanitary Reports for 1890 and 1891 applies more or less to this Report for 1892. Sanitation does not make any material advance in this province, either as respects a more exact registration of births and deaths, or as respects the execution of public works of improvement which the condition of the towns and villages so much calls for. It is true that there has been some advance in the birth and death-rates towards the figures which might be accepted as, at all events, an approximation to the truth, but it is evident that a birth-rate of only 24 per 1,000 must fall far short of the reality, especially when the items are examined of which this provincial average is composed. During the 21 years for which the births are tabulated it appears that the rate has fluctuated between 17 and 25 per 1,000. In 1892, as already stated, it equalled 24, and if we omit Coorg and Rajputana, which are to a large extent removed from direct British control and are otherwise exceptionally circumstanced, this is the lowest birth-rate recorded by any Indian province during that year. The other provinces record rates varying between 25 in Madras, where, as in Burma, registration is defective, and 39 in Berar. Again, if the Burma death-rate be examined in conjunction with those of other parts of India, there is evidence of much shortcoming. In these the ratio varies between 22 in Madras and 49 in the Punjab; in Burma it equalled 20. The accuracy of the mortuary statistics is by no means to be gauged by the extent of the mortality, but there can be very little doubt, especially when the returns of individual towns and districts are investigated, that very many of the deaths which occur in Burma are never reported at all. There is, however, reason to believe, as the Chief Commissioner observes, that the registration of vital statistics has slightly improved during the year; and it is to be hoped that the measures employed to obtain more correct results may meet in the future with greater success. Among these it may be noted that the assistance rendered by the vaccinators is favourably spoken of. The test circles have not proved of much use.

2. *Births.*—Hitherto registration has been confined to Lower Burma, and it is not proposed to extend the system over Upper Burma at present, but steps are to be taken to introduce it there in some of the larger towns. The figures with which we have to deal are thus, as before, for Lower Burma only, for a population of 4,512,695, of which 2,387,627 are males and 2,125,068 are females. The total population is less by 82,874 than that given in the Report for 1891, as owing to the want of information the population of tracts not under registration could not then be deducted. This has now been done. In some of the towns of Burma no doubt, as the Sanitary Commissioner notes, the female population is short, but this cannot be held to explain the generally low birth-rate over the province as compared with other provinces, for in several of those which return a much higher birth-rate the females are in quite as great a minority as they are in Burma. Full particulars of birth registration are given in Annual Form, No. I., which has been expanded under the orders of the Government of India so as to show each circle separately. It appears from this that there are in Lower Burma 121 registration circles, of which 28 are towns and the other 93 rural areas. We may note, as a slight discrepancy, that in Forms VII. and others, dealing with individual diseases, the number of circles appears at 118. But what is of more importance, we observe that in the 1891 Report, the number of registration circles in the province was returned as 817. In 1892 it has been reduced to 121. The Sanitary Commissioner writes that "some difficulty was experienced in deciding " what areas should be selected as circles of registration," but we apprehend that the intention of the Government of India was not to interfere with the already existing circles of registration, but only to provide for detailed information being furnished from each. When the circles are so largely reduced in number as represented by a diminution from 817 to 121, the object of such detailed data is to a great extent defeated. We feared, as we have already stated in some of our memoranda on the Reports for 1892, that the large number of circles might make the preparation of Forms I. and II. somewhat over bulky, but it would be much better in the interests of registration if the old number of circles was preserved, and details given for only some of those in each district, than to double up several comparatively small registering areas into one large one. The great object is, as far as possible, to localise the returns; first, because by this means attention may be drawn to the particular places where neglect of registration is most flagrant; and secondly, because, if any practical use is to be made of the registration, it is essential to discover the localities where low birth-rates or high death-rates prevail and point to unhealthy surroundings. The Sanitary Commissioner speaks of "townships," and some of his tabular statements are headed in this way, but it would avoid confusion if the ordinary division of the registration circles into "rural circles" and "towns" were adhered to.

3. *Deaths.*—The above remarks apply in great measure also to Form No. II., which deals with deaths, and which also is expanded, under recent orders, so as to show details of registering circles. We would suggest, as a minor improvement in both these forms, that the numbers in the first column should be a running number for the province, and not broken into a series of district numbers, as in this way the comparison of the results in different forms would be made much easier. The chief point to be noticed in the death returns is not only the extremes in different towns and districts, but also the marked differences in the mortality recorded at places within the same district. In the Akyab district, for example, the rate runs between 15 and 48 per 1,000, in Hanthawaddy between 13 and 33, in Pegu between 13 and 36, and so on with other districts. Were the data for the 817 circles

available, the ranges within each district would doubtless be even more marked still, and it is important, with a view to render the registration more accurate, that the results in all the circles should be carefully analysed, and prominent notice taken of figures which are manifestly incorrect. Not a few entries of mortality under 10 per 1,000 point to great neglect.

4. *Causes of Deaths.*—Although little dependence can be placed on the statistics as an accurate record of the mortality, they may be taken year after year as a fair index of healthiness and unhealthiness; and, judged by this rough standard, the history of 1892 is unfavourable, for of the previous 20 years only one presents a higher death-rate. This was in 1888, when it reached 23 per 1,000. Compared with 1891, the returns of 1892 show an increase of mortality under every great head, as may be seen from the following statement:—

1892.

Population according to Census of 1891, 4,512,695.

Births registered, 112,070 = 24·83 per 1,000.

Causes of Deaths,	No. of Deaths.	Deaths per 1,000 of Population.	
		1892.	1891:
Cholera - - - - -	6,208	1·38	·52
Small-pox - - - - -	1,463	·32	·29
Fever - - - - -	44,422	9·84	7·76
Dysentery and diarrhoea - - - - -	5,449	1·21	·91
Injuries: suicide - - - - -	55	—	—
" wounds and accidents - - - - -	440	—	—
" snake-bite or killed by wild animals - - - - -	378	—	—
" total - - - - -	873	·19	·16
All other causes - - - - -	31,818	7·05	6·29
Total all causes - - - - -	90,233	20·00	15·93

The Sanitary Commissioner is inclined to attribute a considerable part of the higher mortality of 1892 to improved registration, but the Chief Commissioner, having regard to all the facts, does not accept this view, and is of opinion that 1892 was decidedly unhealthy, and that it was a year "probably as trying as any through which the province has ever passed." A statement is given with a view to compare the facts of death, meteorology, and food prices, but until registration in Burma attains greater accuracy, the basis for such comparison is wanting. It is, however, none the less desirable on that account that the facts, as collected annually, should be recorded, in the hope that the desired accuracy may gradually be attained. In the tabular statement which appears in paragraph 9, a comparison is made between the number of deaths and the rainfall of each month, but it is not clear how the figures of rainfall have been prepared or what they represent. They range from ·1 in January to 459·65 in July.

5. *History of the Chief Diseases: Cholera.*—Although cholera was much more prevalent than it had been in 1891 and in most of the other years with which comparison can be made, the mortality it occasioned was not heavy. For Lower Burma as a whole it averaged 1·38 per 1,000, but the average is made up of district ratios varying from *nil* in Tavoy and Mergui to 3·82 in Akyab. In the town of Akyab it equalled 7·85, and in the town of Paungde it reached the maximum of 11·14. The chief features in the history of the disease were its persistence in most districts over many months without any severe outbreaks, except in a few places, and also the fact, noticeable in the cholera experience of every province, that the towns and villages attacked bore but a small proportion to the total number in the province. According to Form No. VII. this total was 17,414, and of these only 1,497 returned deaths from cholera. Making every allowance for imperfections in the registration, this is a remarkable record. The Sanitary Commissioner writes: "There is no distinct evidence of the disease travelling from place to place. Its origin remains as much a mystery as ever, but it is certain that its propagation was caused and its virulence enhanced by local insanitary conditions." From a practical point of view the great thing to be done is to search out these insanitary conditions, in order, if possible, to apply a remedy. Unfortunately, as a rule, little searching is requisite to discover them. Overcrowded and ill-ventilated huts, with the want of proper drainage and conservancy, are evils which present themselves frequently, and in addition there is a water-supply subject to be contaminated, and no doubt actually contaminated, by the vicinity of cesspools, which are so common, especially in the towns. The Chief Commissioner draws attention to the inconsiderable mortality from cholera in the towns of Rangoon, Prome, and Thaton, where the water-supply is satisfactory. It is important that all facts of this kind should receive ample illustration in the Sanitary Report, which should not only point out the dangers arising from insanitary conditions, but should also encourage their removal, by showing how, as evidenced by a diminished death-rate, such dangers have been reduced in places where similar insanitary conditions have been remedied.

6. *Small-pox and Vaccination.*—The deaths from small-pox, though somewhat more numerous than in the previous year, added only ·32 to the general mortality of the province. Taken by districts, the ratio varies between *nil* in three of them to 1·98 in Akyab. The town of Akyab returns the same

rate as the district to which it belongs, and the only other town in which the mortality equalled 20 per 1,000 is Pantanaw in the district of Irrawaddy, where it was 1.33. It is stated that small-pox is extensively propagated by the practice of inoculation, in which the people have much faith, "as soon as small-pox makes its appearance the inoculators are busy at work, and the result is that in a short time the disease is spread over a large area." These statements, however, do not accord with the facts recorded in the mortuary statistics. There we have evidence of a disease very widely spread over the province, affecting more or less every district except three, existing in several of them for the whole year and in others for great part of the year, and yet, as we have already seen, there was nowhere any violent local outbreak. Such facts cannot be accounted for by the practice of inoculation, nor can we on any such theory explain the very unequal incidence of the disease. Nor can we attribute this result to vaccination, because, although some progress is being made in Burma in protecting the people from small-pox by this means, the number of persons successfully vaccinated every year is still small, and the proportion of the annual additions to the population which is brought under it is very meagre. In Lower Burma, with a registered birth-rate of only 24 per 1,000, the births in 1892 numbered 112,070. The number of infants under the age of one year successfully vaccinated is returned as 26,415. Instead of 24 per 1,000 the birth-rate is probably 40, so that, after making due allowance for deaths and other causes reducing the number of these infants, there is a large balance every year which remains unprotected. More information is desirable on the influence of vaccination in the reduction of small-pox. The statement given at page 18 of the Sanitary Report does not adduce sufficient data for making a comparison between the two, as the "ratio of persons successfully vaccinated per 1,000 of population" in each district seems to be given for one year only, whereas it ought to be given for a series of years. An outbreak of small-pox is generally the signal for increased activity in vaccination, and so it frequently happens that an increased ratio of vaccinations, if one year's statistics alone are taken, is associated with an unusually heavy mortality from small-pox. The statement, in fact, when confined to one year, is rather calculated to illustrate the influence of small-pox on vaccination, than the influence of vaccination on small-pox.

7. *Fever and other Causes.*—Although fevers contributed by far the largest part of the total mortality of the year, nearly one half of the whole, the fever death-rate, 9.84, is small when compared with that in many of the other provinces. In fact, excepting Madras, where it equalled only 8.3, the fever ratio of Burma was lower than it was anywhere else—a result due no doubt in part to the general imperfection of the registration, for the accurate statistics of both troops and prisoners afford evidence of the great prevalence of fevers in many parts of Burma. The fever mortality in individual districts fluctuates between 4.70 in Thongwa and 18.21 in Akyab. In the 25 towns which appear in annual Form No. VI, the ratio fluctuates between 1.33 in Zalun and 23.79 in Pegu, but in Zalun registration appears to be much neglected, as the total mortality in this town from all causes is entered as only 12.99. In comparing the mortality from fevers in different districts and towns, it must always be borne in mind that the term is indefinite, because there are no means of attaining accuracy in diagnosis, and that very different items are therefore embraced under it in different places. Some estimate of this may be formed by taking the fluctuations under "all other causes" into consideration along with those under "fevers." A high fever-rate is not unfrequently coincident with a low rate from "all other causes," and *vice versa*.

8. *Sanitary Defects.*—Reference has already been made to certain sanitary defects in connection with the cholera history of the year. Further particulars on this point are to be found in statements A. and B. of the Appendix, in the first of which information is given regarding the condition of the districts, and in the latter similar details regarding the towns. Both Lower and Upper Burma are included in these statements, but the column showing the death-rates can be filled up for Lower Burma only. Under the three great heads of Drainage, Water Supply, and Conservancy there is abundant room for reform. One great difficulty in Burma, as in all the provinces of India more or less, is the want of money, but the financial information which these statements afford is somewhat perplexing. As regards the district of Akyab, for example, it is said that the net income of the district cess fund was Rs. 1,26,505, and that of this Rs. 110 were spent "on sanitary works." In Prome, out of some Rs. 48,000, between Rs. 12,000 and Rs. 13,000 were spent on such works. It is difficult to understand such discrepancies in the proportion of the funds available for such an important purpose, and also how it was that in the district of Akyab, which is apparently one of the most unhealthy in the whole province, the small sum of Rs. 110 was all that could be had for such greatly needed improvements.

9. *Sanitary Work.*—The Chief Commissioner has already commented on the want of accuracy in the financial portion of the statements relating to sanitary works, and the absence in many cases of all information on the subject. The amount spent by the Public Works Department on such works in 1892 was remarkably small, being, in round numbers, only Rs. 20,000 for Lower, and Rs. 25,000 for Upper Burma. It would be well if the Sanitary Commissioner were to show clearly in his Report how much was done in each place by the combined aid of general and local funds, as the complete separation of the two renders it more difficult to follow the progress that is being made every year. No great works were executed in 1892, but certain measures of reform are noted which are of much consequence to the public health. Of these the most important is the closing of cesspits. In Akyab more especially, where the danger arising from these pits was illustrated by the recent cholera epidemic, a systematic effort was being made to do away with them, and some progress had been effected in this most desirable object. Other matters were under consideration, and several of them were well matured. Among these may be mentioned water-supply and conservancy schemes for Mandalay, a conservancy scheme for Moulmein, improvements

in the waterworks of Rangoon, and the reclamation of low-lying lands in the neighbourhood of this town.

10. *Sanitary Board.*—We regret to learn from the orders of the Government of India on the Sanitary Reports of 1892, as summarised in their Despatch, No. 6 (Sanitary), dated 28th January 1894, that the appointment of a Sanitary Engineer to Burma is not to take place at present. There was no change in the Provincial Sanitary Board during the year, but it was under consideration to relieve the Financial Commissioner of his duties as President of the Board, because his ordinary work demanded all his time and attention. The Board's Report for 1892 contains little information, and is almost entirely occupied with the steps to be taken for the preparation of survey maps of the towns.

8th June 1894.

No. 6.

MEMORANDUM by the ARMY SANITARY COMMISSION on the REPORT of the SANITARY COMMISSIONER of the CENTRAL PROVINCES for 1892.

1. *More information desirable as to the Census of 1891.*—In this report for the first time the Census figures of 1891 are employed for calculating the vital statistics, and the results of the year 1892 are also compared in certain particulars with those of the year previous as re-arranged on the same basis. More information might have been given with advantage regarding the new census from a sanitary point of view. The main fact recorded is that during the 10 years from 1881 the population of the registration circles of the Central Provinces had increased from 8,817,185 to 9,501,401, or in the ratio of 7·6 per cent., but no attempt has been made to show how these figures, either as a whole or in the different districts and towns, accord with the results to be deduced from the registration of birth and deaths during the same period. No doubt such a comparison is disturbed to a certain extent by the movements of the population, by the amount of emigration and immigration that have taken place, but still, when due allowance has been made for these disturbing elements, valuable conclusions may still be drawn from the facts. The composition of the population as regards sex, the proportion of marriagable females in town and country, and the proportion of children, has a very important and direct bearing on the vital statistics, and it is very desirable that attention should be drawn to these points so that they may be duly considered not only by the Sanitary Commissioner of the province, but also by the Civil Surgeons and other officers who are immediately concerned with the vital statistics of towns and rural areas.

2. *Great facts of 1892.*—The main facts in the sanitary history of the people during 1892 were that the birth-rate was abnormally low, that there was a slight increase in the death-rate, but that the year was generally more healthy than its predecessor, the slight increase of mortality having been due to the prevalence of cholera over a certain portion of the province. To this we shall recur when we come to consider the history of cholera during the year, but meantime would notice that the more healthy character of the year, excepting as regards cholera, is manifested not only by the provincial statistics as a whole, but also by those of the districts taken separately. Comparing the results of 1892 with those of 1891 we find that in the three districts mainly affected by cholera the death-rate rose greatly, but in all the other districts except one the rate was reduced. The exception was the district of Balaghat, where, owing to increase of cholera, there was a slight rise. As a step towards collecting information as to the great general causes to which the marked variations in the health of the people from year to year are due, a chart has been furnished for each district, showing the monthly rainfall and also the mean fall for the previous 26 years, and some further particulars have been given concerning other features in the meteorology. The reports regarding the staple food of the people are favourable. The crops were generally good, and the existence of any distress even among the poorer classes is noted in only a few of the districts. In only one of them, the district of Wardha, did the population seem to have been much affected. There the Civil Surgeon reports that "the crops of 1891 had been a failure, and great distress prevailed among the poorer classes, who had to consume blackened jawar and roots of wild plants."

3. *Births.*—In Annual Form No. 1. the births are now shown separately for each registering circle, and the composition of the population according to sex has been added. These are valuable improvements on the old form, by which the data can be examined in detail, and attention drawn to any seeming neglect. In the Central Provinces there are 232 registering circles, of which 72 represent town and the remainder rural areas. Taken by districts the birth-rates, as the Sanitary Commissioner observes, vary between a maximum of 45 per 1,000 in Chhindwara and a minimum of 34 in Burhanpur; but district averages are composed of very varying details, and it is only by carefully scrutinizing these details, such as this Form No. I. furnishes the means of doing, that proper check can be exercised over the birth registration. In the registering circles of Chhindwara, for example, the rates range between 36 and 50, and in those of Burhanpur between 31 and 43. Throughout the whole of the circles, omitting cantonments, where the circumstances are always exceptional, the extremes seem to be 70 at Narsinghpur and 16 at Sambalpur. Uniformity is not to be expected in birth-rates, but extremely high or extremely low ratios call for some report. The proportion of males to females born is another matter in regard to which it is very difficult to obtain

accurate returns. According to the details here given this proportion varied between 84 and 101 per cent, but, as in many other statistics, the errors on one side seem to a large extent to be compensated by errors on the other side, and the general result for the Central Provinces is that among the children born in 1892 106·95 were males for every 100 females born, which seems to be an approximation to the truth.

4. *Deaths, and Measures for improving Registration.*—As already remarked, the slight increase in the mortality of the province, 34·14, compared with 32·98 in 1891, was accounted for, and indeed much more than accounted for, by the severe epidemic of cholera in certain districts, and more especially in Raipur, Balaspur and Sambalpur, which lie together in the south-east, and form the Mahanadi Division. It is worthy of notice that although the deaths from cholera throughout the province as a whole rose from 21,312 in 1891 to 39,972 in 1892, many of the districts suffered less from cholera than they had done in the year previous. The fact is of importance in connection with the causes to which the cholera mortality of 1892 has been ascribed, and to which reference will be made in a subsequent paragraph. Speaking of the relative mortality from all causes in the two years, the Sanitary Commissioner remarks that "there is a decrease in the number of deaths in 13 districts, " and this is chiefly due to the slighter prevalence of cholera in those in 1892 compared with the "previous year." The highest district rate of mortality recorded is 46·66 in Raipur, but in one of the towns of that district it equalled 62·10. We have nothing to add to the remarks we made in commenting on the Sanitary Report of the Central Provinces for 1891 as to the measures which may be taken for improving the registration, and as to the fuller information on this important point, which should be furnished in future reports. From the resolution of the Chief Commissioner at the commencement of the volume we learn that the agency of the Native Superintendents of vaccination had been introduced to test the correctness of the police returns, and that the results of the system will be reported in due course.

5. *History of the Chief Diseases. Cholera.*—The history of the cholera of the Central Provinces during 1892 is of much interest, and opens up many of those much vexed and difficult questions which have so long engaged attention. We have already referred to two of the main facts in this history, *first*, that the epidemic was severe and the consequent mortality heavy, especially when compared with the year previous, and, *secondly*, that in spite of this increased severity in the province, as a whole, many of the districts suffered less than in 1891. To be exact on this point, of the 20 districts 10 suffered more and 10 suffered less, with the general result that the total number of deaths increased from 21,312 to 39,972. Great as this difference is, it is but slight when compared with the differences that are to be found in other years. The statistics of ten years are given at page 33, and they show that, while in 1884 the total deaths from cholera in the province amounted to only 149, in 1889 they amounted to 52,588. How are such marked extremes to be explained? The question arises every time that an epidemic takes place, and here, in connexion with the epidemic of 1892, we have a very common attempt at explanation. The disease, it is said, in nearly every district was brought and disseminated by pilgrims and other travellers. It may well be questioned whether such differences in the public health as those above noted can be due to what must be classed under the general head of accident. Great results, especially when they affect large areas of country, can be produced by great causes. The doctrine of importation and dissemination by means of pilgrims is so easy that it meets with ready acceptance, and the facts on which it is based are frequently not examined so carefully as they ought to be. In regard to the Central Provinces cholera of 1892, for example, great importance is attached to the Magh Mela fair at Allahabad as a centre from which the epidemic in the early part of the year began, but, on turning to the Annual Report of the Sanitary Commissioner of the North-West Provinces for information regarding this fair we find that there was no cholera at all at it. He says, distinctly, "There was no indication of cholera at the Magh Mela at Allahabad, and only three "deaths from the disease were returned from the whole district in January." Pilgrims coming from the fair, doubtless, were attacked with cholera in the Central Provinces and elsewhere, not, so far as evidence goes because of the fair, but because they were persons undergoing more than ordinary privation and fatigue, and therefore more subject to attack than they otherwise would have been.

6. *Difficulty of obtaining exact Information.*—On the question of origin the Sanitary Commissioner is very decided. He says, "The introduction of first cases in the persons of pilgrims from infected places, and the spread of disease in their villages, is undoubted." We should like to have had the evidence on which this statement is made more fully given. There is nothing more difficult to ascertain than the occurrence of first cases of cholera. In Europe, now-a-days, the results of microscopic investigation are considered essential before this question can be answered, and although we by no means agree with this opinion, there can be no doubt that very careful investigation is necessary. In India particularly such an investigation is beset with difficulties. The point is well illustrated by the Sanitary Commissioner's remarks on the district reports, nearly all favouring the idea of importation to which we have already referred. He says: "The dates of first cases given by the Civil "Surgeons were the result of special inquiries, and do not agree with those of the police returns "which were submitted as reported to them in the first instance." An inquiry made in this way, necessarily some time after the events have happened to which it relates, promises little accuracy. Even in well-defined communities, such as jails and regiments which are under complete control, and where every sick person is under careful observation, it is often extremely difficult to say when the first case of an outbreak occurred, and it is quite hopeless to expect such exact information from Indian villagers.

7. *Practical Action should be directed to Places and not to Persons.*—The question of importation is not one merely for theoretical discussion. It has the most practical application, for it involves the

action which ought to be taken. Is cholera to be diminished, and perhaps altogether eradicated, by measures taken against the sick,—by isolation and disinfection—or is this most desirable result to be attained by improvement of the localities in which the people live? Whatever may be said in regard to other countries, and on that question there is no occasion to enter, there cannot be the smallest doubt that in India it must be by the improvement of localities that any decided results can be hoped for. In the Central Provinces, as elsewhere, the local insanitary conditions favouring cholera and other diseases, as the Sanitary Commissioner expresses it, “are only too patent. The village sites are filthy—sodden from promiscuous defæcation, cesspits, and collections of manure and rubbish.” As regards water-supply, “in the tank districts the gathering grounds and the banks of the bunds are polluted, and bathing, washing, and watering cattle are carried on. Where wells are used their bad structure allows entrance of surface pollution, and bathing and washing are done at them. Where streams are used the beds and ravines are the favourite resorts for the purposes of nature. These are the ordinary and ancient customs of the people, and they see no harm in them” The districts which mainly depend for their water on tanks seem to be considered more liable to cholera, because of the impurities which are washed into them and the experience of 1892 favours this view. At the same time it is to be observed that the experience of 1891 told in the opposite direction, and the tank districts suffered from cholera much less than other parts of the province. There can be no question that the stress which the resolution of the Chief Commissioner lays on the importance of improving the water supply in all parts of the province is all in the direction of most important practical work, from which the best results may be anticipated in the improved health of the people and their greater freedom from epidemics.

8. *Smallpox and Vaccination.*—Although more numerous than in the previous year, the deaths from small-pox equalled only 995 out of a population of $9\frac{1}{2}$ millions, or 10 per 1,000. These results are favourable and speak well for the work of vaccination. It is worthy of notice that the total cases which occurred were not the representatives of severe local outbreaks. They were spread over 17 out of the 20 districts of the province. The highest death-rate in any one locality was 1·20, in the town of Mohari. The separate account of vaccination in these provinces is the prescribed triennial report, in which the work is examined in greater detail than in the reports for the intervening two years, and the results of 1892–93 are compared with those of 1890–91 and of 1891–92. The figures have been examined by the Sanitary Commissioner, and the important points have also been noted in the orders of the Chief Commissioner. Although falling short in some respect of those of former years, the general outcome as regards the number of operations, the percentage of success, and the proportion which the vaccinations among infants bear to the general total, show that the staff had been active and energetic in their duty. These are matters of administrative detail into which we need not enter. The facts at which we wish to arrive are those which afford evidence as to the relation between the vaccination returns and the mortality registered from small-pox over a series of years, and we are glad to see that a suggestion on this subject in our Memorandum on the Central Provinces Report for 1890 has been acted on, and a table embodying this information is given at page 7. The small-pox deaths recorded during the eight years here tabulated stand thus:—

1885–86	-	-	-	-	-	-	-	-	-	2,808
1886–87	-	-	-	-	-	-	-	-	-	2,906
1887–88	-	-	-	-	-	-	-	-	-	4,165
1888–89	-	-	-	-	-	-	-	-	-	16,923
1889–90	-	-	-	-	-	-	-	-	-	10,712
1890–91	-	-	-	-	-	-	-	-	-	1,640
1891–92	-	-	-	-	-	-	-	-	-	627
1892–93	-	-	-	-	-	-	-	-	-	1,098

The figures do not altogether agree with those in the Annual Sanitary Reports, but this we conclude has resulted from the deaths being re-arranged, so that they include the vaccination year instead of the calendar year. However this may be, the small-pox deaths above given are those entered in the table to which we refer, and they represent very remarkable fluctuations. During the eight years concerned they range between 627 and 16,923. As the Chief Commissioner observes, the data concerning vaccination in connection with this mortality afford a certain amount of evidence in favour of vaccination, but it is very desirable that the facts year by year should be carefully analysed by the Sanitary Commissioner, and not merely presented in a tabular statement as they have been in this Report, without any comment. There is abundant evidence in other countries of the vast benefit which vaccination has conferred on the people by diminishing small-pox in the most marked degree, and there can be no more successful method of eradicating local prejudices and opposition against it than by showing over a series of years what advantages the inhabitants of the province have derived from it. There ought to be no difficulty in doing this, considering the vast strides which vaccination has made. In 1867, according to Statement IV., the total number of persons successfully vaccinated in the Central Provinces was only 15,060. With rapid and almost uninterrupted annual increases the number in 1893 stood at 396,469.

9. *Other causes of Mortality.*—In regard to fevers and the other causes of deaths which are distinguished in the returns, there is little to be said in addition to the remarks already made in the Report. Fevers alone account for 188,017, or more than one-half of the whole. The proportion which they contributed varies, however, greatly in different districts, from a minimum of 9 per 1,000 in Betul to a maximum of 31 in Nimar. In the greater detail which is furnished by Table VI. the extremes are more marked still, and range between three in one place and 40 in another. It would appear

as if the difference may be at least in some measure due to differences in the mode of registration, for in many instances where the fever death-rate is heavy the death-rate recorded under "all other causes" is light. In the above-quoted instances, for example, we find that Betul, with a mortality of only nine under *Fevers* recorded 14 under *all other causes*, while Nimar, with 31 under *Fevers* recorded only four under *all other causes*. Although these figures are doubtless far from accurate, there can be no question as to the general truth of the fact they convey, that malarial fevers, with all their attendant complications, are a very large item in the diseases from which the people suffer, and that this item varies greatly in extent in different places and in different years. Of 12,619 deaths investigated by the Civil Surgeons during the year, 5,662 are attributed to *Fevers* or 44·87 per cent., while the police inquiry into 28,050 deaths yielded a percentage of 54·68 due to fevers, though, as we remarked regarding a similar statement in the Report for 1891, it is not easy to understand how such an inquiry could be carried out by the police. It seems doubtful if even by the Civil Surgeons the facts gathered, as they apparently were after death, could be elicited with sufficient accuracy to make the statistics of much value.

10. *Diseases in relation to Local Causes.*—In Section IX. of the Report a tabular statement is given which contains much useful information, and which should prove of great practical value in sanitary administration. It shows for 270 different places, classed as either municipalities or thanas, the population, the death-rate, the existing state of things as respects drainage, water supply, and conservancy, and the measures which have been taken to remedy evils in each locality. Under some of these heads more definite information is desirable, so that any defects existing may receive prominent notice. In many of them it is not difficult to connect sickness and insanitary conditions. In Nawaigaon circle of the Bhandara district, for example, with a mortality of 51·77 per 1,000, the drainage is described as "bad," the water-supply as "bad," and the conservancy as "indifferent." In an appendix Dr. Center has given a separate note on the defects of the water-supply over the Central Provinces generally, and has suggested simple means of remedying them which are well worthy of adoption, and we entirely agree with him and with the Chief Commissioner, who has expressed his approval of them, that great advantage would accrue to the public health if they were carried out. The dangers which surround the water-supply both of wells and tanks are great, and yet they seem to be capable of being averted by simple means involving no great expense. The authorities are fully alive to the importance of these improvements. They involve a certain amount of co-operation on the part of the people themselves, and this it may be difficult to obtain from the older generation. With the spread of education and the special instruction which is given in sanitation by the schools more rapid progress may be expected in the future.

11. *Sanitary Improvements effected.*—Considering all the difficulties that have to be encountered, it is gratifying to find that so much has been already accomplished. The work of the year includes the completion of the water-supply for the town of Raipur, some progress in waterworks for Rajnandgaon and Burhanpur, and the laying of a second main from the reservoir to the pumping-station at Nagpur; a survey had also been made for waterworks at Harda. As regards drainage, surveys had been made for the towns of Jubbulpore, Nagpur, Saugor, Bilaspur, and Sambalpur, and "it is hoped that a competent engineer will be soon available to elaborate schemes for the more important towns in which the necessity for a proper drainage scheme has long been felt." As we remarked last year, the importance of having good engineering advice in all these matters cannot be overestimated. Not only is it essential for efficiency, but it is indispensable for the economical expenditure of the funds available. Nothing could well be more unfortunate for the future of sanitary progress than the execution of ill-devised works which, after costing a large sum of money, nevertheless proved a failure. The minor improvements of the year were carried out under the direction of the Sanitary Board, and consisted chiefly in the construction of new wells and the improvements of others.

12. *The Operations of the Sanitary Board.*—The Sanitary Board has been further strengthened by the addition of the Chairman of the District Council as a member. It is hoped that by this means advantage may be taken of Native opinion, and influential Natives led to take interest in the work. The Board was to a large extent occupied during the year in carrying out the scheme of rural sanitation which was described in the Report for 1891. Fifteen meetings of the Board were held during the year. In accordance with the scheme maps were prepared to show the new sanitary units, containing about 30 villages in each. The population of the province is essentially rural. Only 6·9 per cent. of the people live in towns, and many of these so-called towns are nothing more than overgrown villages. The operations of the Board are, therefore, in the main directed towards the improvement of the villages. Four Assistant Surgeons have been appointed as Sanitary Inspectors, one to each division, and the sum of Rs. 50,000, available for the year's work, was equally divided according to these divisions. With the amount contributed from local sources, and with that represented by village labour, it was expected that work to the value of Rs. 2,00,000 would be executed during the year. Although this programme was not fully carried out, an excellent commencement was made. The particulars, which are contained in the summary of the Board's proceedings (Appendix I.), show what was done in each district, the amount available from the provincial allotment, the estimated cost of the improvements proposed, and the approximate expenditure actually incurred up to the end of the financial year. The primary operation arrived at is the improvement of the village water-supply, which the Board regard as "out of all proportion to other things of the greatest importance." After that come the cleansing of village sites, cleaning out of drains, removal of filth, fitting in of excavations, and demarcation of latrine grounds. The scheme, so far, deals only with selected groups of villages "but it is expected that, on the system of self-help and

"grant-in-aid devised by the Chief Commissioner, the operations will be gradually extended over great areas, and that it will come to be recognised by district authorities that sanitary works, such as have been initiated, are as important and necessary for the good of the people as roads and bridges."

8th June 1894.

No. 7.

MEMORANDUM by the ARMY SANITARY COMMISSION on the REPORT of the SANITARY COMMISSIONER of ASSAM for the year 1892.

1. *Measures taken for the Improvement of Registration.*—The improvement of the vital statistics of Assam has continued to engage the attention of the authorities, and the results of another year show how far their endeavours have been attended with success. The figures for 1892 have been carefully analysed by the Sanitary Commissioner, and he has pointed out the more marked defects. The ratios are all based on the Census of 1891, but although the population, as then enumerated, has been employed in two Reports as the groundwork of all the calculations, there has been no attempt, such as we have suggested should be made, to show how far the census totals in towns and districts accorded with the populations which would have existed had the births and deaths—the gains and losses—registered during the preceding years been an accurate record of the facts. It appears that in Assam two agencies are employed for registering the vital statistics. In the Surma Valley and Goalpara it is the rural police, while in all the other parts of the province it is the unpaid village gaonbura. It is not surprising that the data collected by the first of these are as a whole much more accurate than those collected by the illiterate gaonbura, and it is very desirable, as recommended by the Sanitary Commissioner that, if possible, some means should be found of remunerating the gaonbura, and then gradually confiding the work to a more intelligent class with some little education, such as would enable them to keep with accuracy the simple records required. The registers under recent orders are tested by the police officers and also by the inspectors of vaccination on their tours, but it does not appear what was the result of such inspections. A few examples of the facts ascertained by examination on the spot, as compared with what was recorded in the register, would add interest to the Annual Sanitary Report, and at the same time afford ground for judging of what was going on in this matter all over the province. We note that a set of rules with a view to improve the vital statistics had been submitted by the Commissioner of the Assam Valley districts, and that these were being considered by the Chief Commissioner. When finally determined on we would suggest their being printed in full as an Appendix to the Annual Sanitary Report.

2. *Registration of Births.*—There is reason to believe that the care bestowed on the subject and the repeated orders to the local authorities have caused greater attention to be paid to registration, and that the facts are more accurately recorded than they were in former years. The returns for 1892 have been fully examined and commented on, both by the Sanitary Commissioner and also by the Chief Commissioner, and it is not necessary to do more than draw attention to a few of the more important points. The details of birth registration are shown more fully in Annual Form No. I. than they have been previously. They now appear according to registration circles and not merely by districts, and valuable information is thereby given; but we observe that a considerable change has been made in the mode of showing the circles. In 1891, according to Annual Form No. VII. and others dealing with the incidence of particular diseases, the number of registration circles in Assam was put down as 632, whereas in Form No. I. of this Report the number is only 77. It appears from the orders of the Chief Commissioner that it was determined in November 1892 that "the units of registration circles—in each district should be,—

- "(a.) Each town, sadr or sub-divisional, including cantonments, where such exist.
- "(b.) Each thana, including outposts.
- "(c.) All the tea gardens taken together in each district."

It is not clear whether these changes have been made merely for convenience in preparing Forms Nos. I. and II. in which it would not be possible to include 632 entries within small limits or whether the division of each district into registration circles has really been altered in the manner indicated, the number of such circles in Sibsagar, for example, being reduced from 159 to 8; Lakhimpur from 108 to 6; Cachar from 15 to 7, and so on with the other districts. If the old number of registration circles remains, as we conclude it does, we would suggest that the comparison of maximum and minimum birth and death rates—the point in connection with which the new arrangement is mentioned—should be shown according to them and not according to the consolidated areas, which for convenience are now given in Form I. The comparison between the results attained even in these fewer and therefore larger portions of each district brings out some remarkable ratios. As regards births the ratios vary between 6 and 45 per 1,000, and these two provincial extremes are found in the same district, Goalpara, where, as already mentioned, the registration is believed to be carried on with greater accuracy than in many other parts of the province. In looking at the minimum of 6, it is however necessary to bear it in mind that the proportion of women at the particular place indicated was very small and the same remark holds good of other circles which return a very low ratio, showing how necessary it is in considering the statistics of births to have regard to the proportion of the sexes

With all its inaccuracies there is evidence that in Assam the registration of births is making progress towards greater accuracy. The provincial ratio for 1892 (31·05 per 1,000) although nominally not quite so high as that of 1888 (31·62) was in reality higher, as the population on which the ratio for 1892 was worked was nearer the reality than that on which the ratio for 1888 was calculated. The latter was based on the Census of 1881, or seven years after that census was taken, whereas the ratio for 1892 was based on the census of only the year previous.

3. *Registration of Deaths.*—The average death-rate of the province, 34·2, shows an increase of 4·30 per 1,000 on that of 1891, and is higher than that of any of the other years quoted. It exceeded the birth-rate by 3·16 per 1,000. An examination of columns 7 and 8 in Form No. I., in which the births and deaths are compared side by side, shows that this general result for the province as a whole is made up of very varying details. In 23 of the 77 units adopted in that form the births exceeded the death but in the remaining 54 units the deaths exceeded the births. The highest birth excess is 12·58 per 1,000, but the excess of deaths in many places is much greater than this, and in some reaches even more than 50 per 1,000. These abnormal figures may be explicable in certain areas by excessive sickness and mortality, but an examination of the figures rather points to defects in the registration, especially in the towns, and more particularly to neglected registration of births. Annual form No. II. has been prepared on the same system as that already referred to as having been followed in the preparation of No. I. The registration circles have been grouped according to the same 77 units, and the maximum and minimum death-rate for each district is tabulated in paragraph 9 of the report. The extremes, as the Sanitary Commissioner observes, are very remarkable and suggest the necessity for local inquiry as regards several of them. If we are right in concluding that the areas adopted in Forms I and II., are merely those which it has been found convenient to frame for the purpose of filling in these forms, and the old registration circles remain as before, we would suggest that without disturbing this arrangement the Sanitary Commission analysis and comparison of extremes in each district might with advantage be based on the returns from the original circles, and not on those of the amalgamated areas which appear in these forms. The more localized the investigation of vital statistics is the more practically useful it is calculated to be, both as respects births and deaths, always provided that the population included in the area is sufficient basis for calculation.

4. *Causes of Death.*—Before considering the history of the chief diseases in the Province of Assam during 1892, we may glance at the mortality recorded under the various headings. The results stand thus:—

Causes of Death.	Number of Deaths.		Ratio per 1,000 in 1892.
	1891.	1892.	
Cholera - - - - -	23,882	21,552	4·29
Small-pox - - - - -	2,361	1,452	·29
Fevers - - - - -	75,965	93,971	18·72
Dysentery and Diarrhœa - - - -	14,418	15,685	3·12
Injuries - - - - -	1,597	2,016	·40
Other causes - - - - -	31,933	37,108	7·39
Total - - - - -	150,156	171,784	34·21

The increased mortality of the year to which reference has been already made is chiefly ascribed to “fevers” and “other causes.” Under both cholera and small-pox there was some diminution. For the higher general death-rate recorded, the Sanitary Commissioner believes that several causes conspired. Some part is to be credited to improved registration, some to an increase of fevers in certain districts, and some again to an increase of *kala-azar* in others. When we come to inquire what general conditions were at work in order, if possible, to explain the greater sickness of the year, we learn that the rainfall in certain districts was unusually heavy. In paragraph 70 an interesting table is given to compare the deaths in the three districts of Cachar, Goalpara, and Sibsagar during a series of years with the meteorological phenomena, and also the price of the chief articles of food in each of them; but although the facts point to a decided connection between a small rainfall, low temperature, and cheap provisions on the one hand, and improved health of the population on the other, they are by no means uniform. For such an inquiry accurate data are indispensable, and the registration of deaths in Assam, especially during the earlier years, was too imperfect to be of much value, even if the other information given could be entirely depended on. It is very desirable that under all the heads to which this inquiry relates, an effort should be made year by year to collect and collate the main facts with accuracy. In a former memorandum we suggested that some account of the emigration which takes place into Assam every year would form an interesting item in the Annual Sanitary Report, more especially as so much of the epidemic sickness which has prevailed in the province has been attributed to importation by labourers coming to work in the tea gardens, and we still think that this idea might be acted on with advantage.

5. *History of the Chief Diseases: Cholera.*—Although cholera was less prevalent during 1892 than it was in 1891, and accounted for 2,330 fewer deaths than in that year, it was still more severe than usual, and, indeed, caused a greater annual mortality than it had since 1884. The facts regarding its distribution and incidence are tabulated for each district during every month of the

year. The general average death-rate from this cause is made up by district averages varying between 1.76 in Goalpara and 7.39 in the neighbouring district of Kamrup. In every month many cholera deaths were reported, and with the single exception of the Khasi and Jaintia hills, where three of the months are blank, no month in any of the districts was ever entirely free from it during the year. The smallest monthly provincial total was 721 in January, and the largest 2,743 in December, and yet out of 13,624 villages in the province, only 2,461 recorded deaths from the disease. With such a history of widespread persistence, and yet at the same time of remarkable isolation, it would be very difficult to fit in any theory of importation to account for the disease, and the Sanitary Commissioner is careful to disclaim any such purpose. We would merely suggest, as an important addition to the facts he has collated on the subject of cholera, that some account should be given of the localities most severely affected. This is no doubt to be found, to a certain extent, in the tabular statement, Appendix C., where the condition of each place as regards water-supply, drainage, and other sanitary requisites is described in relation to its total general mortality, but it is desirable that such conditions should be specially examined in immediate connection with the proportion of this mortality which was due to cholera. Great hopes are expressed that the substitution of wells for tanks may in time prove a valuable defence against cholera, but it must be remembered that severe epidemics of this disease have frequently occurred among people whose sole supply of water was derived from wells.

6. *Small-pox and Vaccination.*—It is satisfactory to find that the deaths from small pox in 1892 numbered only 1,452, or the equivalent of .29 per 1,000 of the population. This, it is said, is a smaller death-rate than that of any year since 1879, but, according to the table given in paragraph 12 of the Vaccination Report, the number of deaths from small-pox in 1886 was only 564, which, making every allowance for changes in population, must represent a considerably lower ratio than that recorded for 1892. The most noticeable features in the distribution of the small-pox mortality are the high rate for the district of Kamrup (1.62) and the immunity of Nowgong, where, among a population of 344,141, not a single death from small-pox was recorded. Of the total of 1,452 deaths from small-pox which were registered throughout the province during the year, 229 occurred in infants under one year and 869 in children under 12. The separate Report on vaccination during 1892-93 shows that considerable progress was made during that year. The number of operations performed represents a substantial increase, the percentage of success was high, and the proportion of infants protected shows a considerable advance on the work of former years. The total number of infants vaccinated with success amounted to 41,920 (38,878 by the special Department and 3,042 by the Dispensary staff), while the number of births registered during 1892 was 155,909. We are glad to learn that "the percentage of successful primary vaccinations among infants under one year of age to the total number of births registered was 26.89 in 1892-93, as compared with 15.50 in 1891-92 and 11.69 in 1890-91, exhibiting a considerable increase in favour of the past year." Evidence that the wider spread of vaccination in Assam has been attended with a diminution of small-pox is furnished in paragraph 13 of the Vaccination Report and the tabular statement which precedes it, the general result being that the annual average number of deaths from small-pox during three successive quinquennial periods, commencing with 1877, stood thus—1,812, 3,336, and 1,846, while, as already stated, the figure for 1892 was 1,452. The results show great fluctuations, especially when they are taken by each year separately. In the first period they vary from 1,014 to 3,129; in the second period from 564 to 6,162; and in the third from 1,401 to 2,361. So far there is no doubt general evidence of improvement, but it would be more satisfactory if, instead of taking the province as a whole, the vaccinations and small-pox deaths were compared district by district.

7. *Fevers, Beri-Beri, and Kala-Azar.*—The general question of the prevalence of fevers is so mixed up in Assam with discussions regarding beri-beri and kala-azar that they may all three be conveniently considered together. The general statistics for fevers for 1892 are very unfavourable. The mortality under this head equalled 18.72 per 1,000, while that of 1891 had been only 15.13, and this again was an advance on 13.88, the average of the previous five years. Taken by districts the fever deaths were 29 per 1,000 in Goalpara, 26 in Kamrup, 24 in Darrang, 21 in Nowgong, and under 19 in each of the others. The increase in the fever deaths is ascribed in part to improved registration and in part to an actual rise in the number of deaths due to the heavier rainfall and to outbreaks of kala-azar in certain places. But, so far as can be gathered from the statistics and other information contained in the report, any rise in the mortality from this last cause in certain districts had been more than balanced by a reduction in others, so that the total deaths ascribed to kala-azar throughout Assam in 1892 were only 6,734, compared with 9,937 in 1891. The disease was reported to be rapidly decreasing in the districts of Kamrup and Goalpara, but increasing in Nowgong and Darrang. We fear, however, that little dependence can be placed on these figures, and that the recognition of kala-azar as a special disease, if it is really a special disease at all, is beyond the powers of the agents on whom the duty of reporting necessarily devolves. In particular, the line to be drawn between kala-azar and beri-beri is by no means well ascertained, while both would seem to be easily mixed up with severe cases of ordinary malarious fevers. The presence of a particular parasite, the *duodenalis* or *duodenale*, has been claimed as the distinguishing feature of kala-azar, but, as we remarked in noting on the report for 1891, it would seem that "too much importance has been attached to the parasite, that its presence has been too hastily assumed to be the cause of the disease whereas it may yet be proved to be a consequence or merely an accompaniment of it." Of the correctness of these views we have striking confirmation in the researches which were conducted by Surgeon-Major E. Dobson, Civil Surgeon of Dhubri, and an account of which is given in Appendix D. After examining healthy coolies and those rejected for different causes, as well as

a variety of other persons, such as servants, prisoners, and patients in the dispensaries, the results were that the parasite was found in 454 out of 547 persons apparently in excellent health, and in many of these in great numbers, while in not a few of the cases of kala-azar examined it was not found at all. The practical outcome of the whole discussion would seem to be what we suggested in our remarks on the Assam Report for 1891, that the best method of dealing with this question does not consist in attempts directed to prevent the importation of the parasite, which, even if it were beyond all doubt the cause of the disease, could never be successful, but in the improvement of local conditions under which the people live.

8. *Sanitary Defects.*—Appendix C. gives some account of the drainage, water supply and conservancy of 27 municipalities and thanas throughout the province, and under all heads defects are noted. But the most striking evidence of the urgent want of reform is to be found in the column of this tabular statement which gives the death-rate, especially when it is borne in mind that the deaths are under rather than over stated, and that in many of the towns the record in this respect falls far short of the actual facts. Of the 23 places entered in the statement there are 18 in which the mortality exceeded 30 per 1,000, and of these, again, five return a death-rate of over 50 per 1,000. In the town of Tezpur the maximum is reached of 80·78. The population here is small, only 4,011, and considerable fluctuations are therefore to be expected in the results year by year, but it is remarkable that in this town, with such a very high death-rate, no mention is made of any sanitary defects at all. On turning to Annual Form No. VI., we find that the deaths were in great measure due to cholera and dysentery and diarrhœa. When disease prevails, and especially when this is indicated by a heavy death-rate, it is important that the local causes should be searched out with a view, if possible, to their removal.

9. *Sanitary Improvements.*—A separate column of Appendix C. is devoted to showing the “measures taken to remedy the evils in each locality” and further information as to what was done in each municipality, town, and union of the province is given in Section IX. of the report. No great work was either commenced or completed during the year. In Assam, as in other provinces, the want of funds has proved a great obstacle to the construction of such works, but the information furnished by the Sanitary Commissioner regarding individual places, many of which were visited by him during his tour, and also the general conclusions which are summarised in the orders of the Chief Commissioner, show that the important question of sanitation engages much attention. Some progress has been made in minor sanitary improvements. The income of local bodies had increased somewhat during the year, and the proportion of that income which was spent on such improvements had also increased. As regards villages which are not included in the last remark, it is observed that the limited income of the Local Boards under which they are in this respect administered has been judiciously expended, that an addition has been made to the income of these Local Boards, and “with these extra funds at their disposal the Chief Commissioner expects that every local Board will increase its annual expenditure on sanitary works, and more especially in the direction of supplying good wells to every large village as well as to every important *hât* (market) held outside municipal limits.”

10. *Sanitary Board.*—No change was made during the year in the constitution of the Provincial Sanitary Board, but it was decided that instead of formal meetings for the transaction of business the papers should be circulated among the members. The endeavours of the Board seem to have been mainly devoted to the improvement of the water-supply, drainage, and conservancy of villages, and in the summary of work done in the different districts mention is made of the sums expended on such objects; but the actual progress made has not been great. As already mentioned, it was hoped that more may be accomplished in future years.

8th June 1894.

No. 8.

MEMORANDUM by the ARMY SANITARY COMMISSION on the RAJPUTANA SANITARY VACCINATION DISPENSARY and JAIL REPORT for 1892.

1. *History of a Disastrous Year.*—This is the history of a very trying year for Rajputana in which there were great sickness and suffering among the people, and the officials were called on to make unusual exertions to prevent starvation in many parts of the country, not only within British territory, but also in some of the Native States. In three of these—Marwar, Bikanir, and Kishengarh—as well as in Ajmere and Merwar, scarcity approaching to famine existed, and it was necessary to organise relief works in many places, with hospitals and medical attendance, while at the same time a general medical supervision was exercised over the health of the people, to watch their condition and to determine how far relief and attendance were really required. All the arrangements seem to have been very successfully conducted, and although it was not possible to obviate the evil effects of scarcity there was no death actually due to starvation. The causes of the distress were very plain. The rains of 1890 and again of 1891 had failed to a degree almost before unknown, and it was not till after the rain of 1892 fell, as it fortunately did in abundance, that the wants of the people were fully met. Cholera, smallpox, fevers of a virulent type, and, in fact, all manner of diseases, were more than ordinarily prevalent, and it is not to be wondered at that under these

circumstances the statistics of 1892 show a considerable falling off in the birth-rate and a death-rate double that of the year previous.

2. *Vital Statistics: Births.*—We need not further enlarge on the great facts of the year which are already very clearly narrated in this Report and summarized in the introductory note by the Agent to the Governor-General for Rajputana, but we may draw attention again to the great imperfections which still characterize the statistics of both births and deaths. In Annual Form No. 1 the births shown in detail for the 23 circles into which the Ajmere and Merwara districts, which comprise the part of Rajputana directly under British rule are divided, the rate varies between 6·73 in one and 78·83 in another. In Ajmere town it equalled only 13·49, while in Ajmere suburbs it reached the maximum of 78·83 above noted. The general average for these districts, 15·61, must be far under the truth even in a year of distress, for a diminished birth-rate rather follows than is coincident with this state of things. The disproportion between the male and female births is a further evidence of inaccuracy. The general ratio of 128 males born to every 100 females is not to be credited, especially as the average for the two districts is composed of items ranging between 97·10 males to every 100 females in one circle to 170 males to every 100 females in another. With such unsatisfactory results within British territory it is not surprising that the returns of births in the Native States should be equally untrustworthy. In the 21 separate places within these States which are tabulated on page 12 the births vary between 3·12 and 71·98 per 1,000. Nothing is said of the means taken to improve the registration, and yet this is a point of great importance which ought to engage the attention of the authorities.

3. *Deaths.*—The record of deaths during 1892 also bears evidence of equal neglect. The death-rate in Ajmere-Merwara rose from 20·23 in 1891 to 40·80 in 1892, an increase which, considering all the circumstances, is by no means improbable. It was also to be expected that the rate in different circles would greatly fluctuate, but without some explanation it is difficult to accept the extreme rates as accurate, more especially when they are recorded opposite places which are close together. Here we have Ajmere suburb again figuring in remarkable contrast to other circles, and particularly to Ajmere town. In the one circle the mortality is 137·42, in the other it is 24·86. In the suburbs, moreover, the female death-rate is 189·50 compared with 112·56 among males. In these suburbs also, we see that no less than 39 deaths are ascribed to wounding and accident, the rate under this head equalling 14·81, while the next highest is only 1·01, and none of the others amount to 1. In the Native States it is sufficient to note death-rates ranging between 4·28 and 54·14. On an average the ratio in the Native States stands at 20·07, or about one-half what is entered for Ajmere-Merwara. In the Native States, as we have previously remarked, progress in registration can hardly be expected until the British portion of Rajputana sets a better example.

4. *History of the Chief Diseases: Cholera.*—In Ajmere-Merwara cholera deaths were not registered till April, and they ceased in August, the total having been 2,352, or 4·34 per 1,000. In the Native States of Bikanir and Dungarpore, the one in the extreme north and the other in the extreme south of Rajputana, cholera was somewhat prevalent in January, and in the former it continued almost uninterruptedly throughout the year. The total number of fatal cases of cholera recorded in the Native States is 24,408, of which the greater portion are returned from Jodhpore, Bikanir, Ulwar, and Dungarpore; but the ratios of mortality per 1,000 of population have not not been worked out for all the Native States, and so it does not appear which of them suffered most severely. In the absence of more accurate statistics it would be fruitless to attempt to follow the history of the disease or to weigh the opinions expressed here and there that the epidemic was due in any measure to pilgrims from Hurdwar. It would be more instructive to know the sanitary condition of the places which suffered from cholera, and particularly of those which suffered most severely. On this point information is much required, but there is no sanitary survey of towns and villages even for those parts of Rajputana which are administered by the Government of India. The first step towards improvement in local conditions is to point out clearly, place by place, the evils which now exist.

5. *Smallpox and Vaccination.*—The only other disease to which we need refer is small-pox. The statistics show an increase under this head from 561 deaths in Ajmere-Merwara in 1891 to 1,652 in 1892, and from 426 in Native States to 1,646 in 21 out of the 35 places for which the numbers are given. Owing to the unusual sickness and distress, vaccination was attended with more than ordinary difficulties, and there was a falling off in the amount of work done both in British territory and Native States. The percentage of success claimed in re-vaccination (87) is somewhat under that of the previous year, but it is sufficiently high to indicate either that the returns are incorrect or that the primary vaccinations in these cases had been unsatisfactory. It would be well if, in Rajputana, and indeed in all the provinces, the Sanitary Report dealt less with the number of vaccinations and re-vaccinations and the number of those returned as successful, and analysed more closely the effect which vaccination was having on the extent of small-pox among the people. This is the only real test of the value of the work done.

6. *Sanitary Progress.*—The circumstances of the year were not favourable to sanitary progress, but one very important work was carried out, and that is the construction of an additional reservoir of water for the supply of Ajmere. This work was referred to in last year's memorandum, but we now have the additional information that it has fulfilled expectation, and proved of great advantage to the city of Ajmere, which for some years had been threatened with a water famine. Some minor improvements are reported both in Ajmere-Merwara, and in some of the Native States. It is noted that in several of the cities considerable attention was being paid to sanitation, and that the improvement of the villages had been taken up by the Ulwar durbar.

7. *Jails*.—It is remarkable that although the year was generally so unhealthy the mortality in the jail of Ajmere was almost the same as it had been in the year previous—27·61 compared with 27·00. The 14 jails of Native States which furnished returns show an increased death-rate—41·70 compared with 33·70. In connexion with any increase of sickness or mortality the only insanitary condition mentioned is over-crowding, an evil which is most apt to occur in a year of scarcity when the number of prisoners increase and they frequently arrive in a state of health which renders any over-crowding specially dangerous.

19th July 1894.

No. 9.

MEMORANDUM by the ARMY SANITARY COMMISSION on the MEDICAL and SANITARY REPORT of Coorg for 1892.

1. *Vital Statistics. Careful Analysis of details desirable. Births*.—There is not much in this Report calling for remark. In previous memoranda we have referred to the advantage which would be derived by taking the statistics of the six registration circles into which the province is divided and comparing the details instead of dealing with the population as a whole. Even if such details are not given in the manner we propose for all the annual statements, a more complete analysis of the figures would be of great use, not only in order to test the accuracy of the returns, but also with a view to their practical application. For example, we learn from Annual Form No. I. that the total births registered during 1892 numbered 3,829, or an equivalent of 22·12 per 1,000, but this is merely the average of the province as a whole, and loses much of its value unless the materials of which it is composed are shown. What was the rate in each registration circle, and what range do these rates yield between the maximum and minimum? The birth-rate, although it shows an increase on that of 1891, is very low. This result would seem to be dependent in part on the excess of males in the population, but without a careful examination of the figures circle by circle no conclusion can well be drawn on this or any other point connected with the vital statistics.

2. *Error in mode of calculating Male and Female Births*.—In Annual Form No. I. the ratio of male births per 1,000 of population is entered as 20·35 and that of female births at 24·33. If these ratios were correct then the total birth-rate ought to be 44·68, but it is only 22·12. It would seem that the male birth-rate has been calculated on the male population and the female birth-rate on the female population, which is altogether erroneous. All should be calculated on the total population as the heading of the column indicates. A similar error occurs in the Annual Sanitary Report of Coorg for 1890 and 1891, but it escaped observation.

3. *Deaths. Measures for improving Registration*.—In dealing with the deaths the examination of the details is more important even than in dealing with the births. It is not enough to record that the deaths during the year represented a mortality of 30·62 per 1,000. It is desirable that the circle ratios, from which this average ratio is calculated, should be considered both with the object of inquiring further as regards those places where the nature of the returns leads to the suspicion that there has been some neglect in the registration, and where such inquiry is therefore evidently wanted, and also with a view to what is the practical aim of all such statistics—the careful investigation of places where the mortality has been high and where accordingly there must be local insanitary conditions which ought to be dealt with. In addition to such an analysis of both birth and death returns there is another important means of improving the registration to which we have frequently referred, and that is the inspection of the registers whenever opportunity occurs by officers on their tours, and by the vaccination staff whose own work is so immediately concerned with birth registration on the one hand, as representing the most important material with which they have to do, and with death registration on the other, so far as it relates to deaths from small-pox, the number of which is the only real test of the excellence of vaccination. We are not aware how far the services of officers on tour are available in Coorg for such inspections, but on this and the other points above indicated it is desirable that information should be given in future reports.

4. *History of the Chief Diseases: Cholera*.—The year was very unhealthy, the net result being that the death-rate from all causes was nearly 9 per 1,000 in excess of what it had been during 1891. Cholera, though more prevalent than it had been in that year, contributed only 58 deaths, or a ratio of ·33 per 1,000. The disease was widely distributed. Out of the six taluqs four returned deaths from this cause, but the highest ratio so occasioned was ·94 per 1,000. This we learn from the cholera map. It is worthy of notice also that the whole of the 58 deaths throughout Coorg were returned from 19 villages out of a total of 517. Cholera is reported to have been severe in the neighbouring districts of Mysore and South Canara, and its appearance in Coorg is attributed to importation from these parts. The exact facts on which this opinion is based are not mentioned, but if this be the real explanation it is remarkable that, although the disease showed itself unmistakably in Coorg, by seven deaths in the month of April, the total for the year amounted to only 58, and that the intercourse which must have taken place among the population during nine months after the disease first appeared led to cholera deaths in only 19 out of the 517 villages in the province.

5. *Small-pox and Vaccination*.—Small-pox was much more destructive, and caused 913 deaths during the year, or a mortality of 5·27 per 1,000. In 1891 Coorg showed the highest small-pox

mortality of all the provinces of India, but the ratio on that year (2·75) was little more than half what it amounted to in 1892. This pre-eminence of Coorg in small-pox mortality is the more remarkable because the proportion of the population reported to be protected by successful vaccination is extraordinarily high. In 1891-92 it was set down as 54 per 1,000, the next highest being only 37, in the Central Provinces. In 1892-93 it is given as no less than 63·80. Several of the sanitary reports for the other provinces for 1892 have not yet reached us, so that we cannot as yet make a full comparison of results, but we observe that the proportion entered in the Berar Report is only 37. So far as the work done by the vaccination staff can be judged by the other figures given in this report progress was being made. The number of persons operated on had increased and the percentage of success was high, but the prevalence of small-pox, which is the only real test by which the vaccination work can be tried, is unsatisfactory.

6. *Sanitary Defects and Improvements.*—Fever and also dysentery and diarrhoea contributed more than ordinarily to the mortality of the year, but no special information is given as to the localisation of these diseases. It is desirable that this should be supplied in future reports, and that side by side with the death-rates, especially where these rates are high, some account should be given of the local defects which seem to be connected with these results. This is now done in the provinces generally in a systematic manner by means of a tabular statement or sanitary survey of towns and villages, and a similar form might be employed for Coorg. We observe that the Civil Surgeon's inspection notes of towns and villages have been forwarded to the Commissioner, and that orders have been issued in regard to the removal of insanitary conditions in some of them. The most important work of improvement mentioned is the provision of water for the town of Merkara, on which Rs. 15,208 were spent during the year, but it does not appear what has actually been done in the matter, or when the supply will be available.

7. *Sanitary Board.*—Five meetings of the Sanitary Board were held during the year, at which various matters were discussed, the more important being proposed rules for the sanitation of villages and rules for the protection of labourers, based so far as applicable on those in force at Assam.

8th June 1894.

No. 10.

MEMORANDUM by the ARMY SANITARY COMMISSION on the REPORT of the SANITARY COMMISSIONER of MADRAS for 1892.

1. *Evidence of Progress.*—We have read this Report with much interest. It is the history of another most unhealthy year, but at the same time contains a record of much excellent work which cannot fail to be very beneficial. The volume as usual consists of distinct reports by the two members of the Provincial Sanitary Board—one by the Sanitary Commissioner, which deals with the statistics of the year, the meteorological and other conditions, and all the other questions prescribed for discussion in Sanitary Reports; and the other by the Sanitary Engineer, which contains information regarding the drainage and water-supply works which had been overtaken or were in progress during the year. This last is a very gratifying record, and sets an example which might be followed with great advantage by other provinces. It would be well that they should all be made fully acquainted with the progress which Madras is making in these important matters, and with the mode of working adopted in that Presidency, as it seems well calculated to obtain the much desired end. It is apt to be lost sight of that the great aim and object of the Sanitary Department in each province is to carry out the work of drainage, water supply, and cleansing, and that success or failure is to be measured by the extent to which this is accomplished. The experience of Madras in 1892 is thus most encouraging, not only because of what has been done there, but also as an example of what we hope may soon be accomplished in every province in India.

2. *The unhealthiness of the Year and its Causes.*—As already mentioned, the year was unhealthy. The number of deaths recorded was much the same as in 1891, being 750,755 in the one and 747,553 in the other. In the report for 1891 the mortality of that year was set down as 26·2 per 1,000, but this ratio was based on the census population of 1881; corrected by the census of 1891 the ratio is reduced to 22·2, while that of 1892 stands at 22·3. The net results of the two years are thus almost identical, the chief differences in details being a considerable diminution in cholera, which, however, still continued severe in certain parts, some increase of small-pox, and a very large increase of fevers. The year was marked by an unusually heavy rainfall, the mean for the province having been 58·43, but there could be no better illustration of the erroneous ideas to be formed from averages, on which we have frequently insisted, for we learn that while the rainfall was above the average in 10 districts it was below the average in 12 others, so that the statement showing increased rainfall for the province as a whole is entirely misleading. This point has been already noticed by the Government of Madras, which has directed that in future the districts should be divided into groups and a mean struck for each group. The prices of food were decidedly high. At pages 8 to 11 a very interesting statement is given showing for every district of the province the mortality, the meteorological conditions, and the prices of the most common grains during 1892, as compared with each of the previous five years. High prices affected all of them. As regards rainfall, the general character of the evidence is decidedly to connect heavy rainfall and increased mortality, and *vice versa*.

3 *The Census in relation to Registration of Births and Deaths.*—Before considering the vital statistics of 1892, we may glance at the results which the Sanitary Commissioner deduces from the history of the period between the censuses of 1881 and 1891, and the figures which those censuses recorded. We have in several of our Memoranda on the Sanitary Reports suggested that this should be done as a valuable means of checking the registration, and we are glad to see that it has been carried out in this Report. It appears that, according to the censuses, the population of 1891 shows an increase of 15·28 per cent. over that of 1881, whereas the excess of births over deaths, as recorded by registration during the intervening period, amounts to only 7·87. This general result for the whole province is made up of elements varying much in different districts. In both the census and registration returns all the districts show an increase, but the proportion of this increase between the results of the two modes of calculation ranges between ·80 per cent. in one and 14·79 in another. A separate statement constructed on the same principle is given for each of the 48 municipal towns. Here the census increase is 12·49, while the registration increase is 2·21, and the details, if taken separately, indicate very marked differences. The Sanitary Commissioner seems inclined to ascribe some of these to immigration, but there can be little doubt that, as a whole, the evidence points to defective registration as the great cause.

4. *Births.*—This conclusion is fully borne out by the statistics of births in any one year. If we take the figures for 1892, we find the same evidence of defective registration as usual. The general birth-rate of 25·1* per 1,000 is manifestly far under the truth. It is not necessary to examine the details for further evidence of this fact, but when we do look at the results for individual districts and circles such evidence is abundant. In the districts the rate varies between 36 in Madras and 17 in Gangam. In 36 municipalities which are tabulated at page 21 the rate varies between 20 and 41, or, if we take the particulars of the 270 registering circles entered in Form No. I., we have a scale rising from 1·8 to 48 per 1,000. The diagram opposite page 22 shows very graphically how far behind the registration of births in Madras falls short of what it ought to be. Assuming, as there is every reason to believe, that every return of not more than 35 per thousand must be erroneous, there are only 11 registration circles in the whole of Madras which are not neglecting their duty in this matter of birth registration, and many of these to a very large extent. The Government has again called special attention to this matter. Several of the other provinces have been much more successful than Madras in the recording of births. Madras, with only 25 per 1,000, compares ill with 39 in Berar, 38 in the Central Provinces, and even with 34 in Bombay.

5. *Deaths.*—A similar circular diagram to that concerning births is given to illustrate the deaths. Here, as might be expected, the rates vary enormously, and one advantage of the diagram is that it shows very clearly how many of the most marked fluctuations are to be found within the same district. In Kistna, for example, they range from 42 to 17, and although this is an extreme case, there are many others where the differences are sufficiently striking. Taken by districts, the mortality varied between 46 in Madras and 14 in Gangam. Of 55 municipal towns tabulated at page 28, Kurnool heads the list with 55·2 per 1,000, and Parlakimedi is at the foot with 18·2. Among districts after Madras, the next highest is 35·1 in the Kurnool district. In none of the others did the rate amount to 30, and in nine it did not exceed 20 per 1,000. Much of this must be set down to imperfect registration. The general death-rate of the Madras Presidency is suspiciously low compared with that of other provinces. The rate for 1892 (22·3) is lower than that recorded in any other province during that year except Lower Burma where registration is much neglected. In the other provinces it ranged between 32·50 in Bombay and 49·4 in the Punjab, the result of the most unhealthy year ever recorded in that part of India. Another respect in which the mortuary statistics of the Madras Presidency are peculiar is the small variation in the mortality of different years. In other provinces this varies greatly, and we know from the accurate statistics of troops and prisoners that such variations represent the truth, but in Madras during the last six years the difference has been only that between 21·4 and 23·5.

6. *History of the Chief Diseases. Cholera.*—Although the epidemic of 1892 was not so fatal as that of 1891, the number of deaths from cholera recorded during the year was very large (79,033) and the death-rate per 1,000 under this head (2·3) heavy, compared with that of most years in the Madras Presidency. In 1891 the deaths had numbered 98,773, yielding a death-rate of 3·5. This epidemic of 1891 was remarkable for the large number of deaths recorded in December. Of the whole cholera deaths of that year 32,822, or near one quarter, occurred in this one month. In January 1892 the epidemic continued severe, and the number of deaths recorded in that one month was considerably larger than that recorded in any other month of the year. During 1892 nearly every district suffered almost continuously, but in all of them the disease had greatly declined in the last quarter, and in several it had disappeared altogether. The district mortality, however, varied greatly, the maximum having been 6·5 in Godavari, and the minimum ·2 in the neighbouring district of Ganjam. The only district which intervenes is Vizagapatam, and here the cholera death-rate was only 1·7. The conjunction of the two extremes so near one another is remarkable and gives rise to the question, what causes, if any, can be discovered to account for the contrast? In Godavari, the rainfall of 1891 had been decidedly deficient; that of 1892 was much above the average. A similar remark applies to Kurnool, which suffered next in severity to Godavari, the cholera death-rate there having been 6·0. But in Tanjore, which comes third on the list, with a ratio of 4·1, the state of things in respect of rainfall was very different. In 1891 it had been much the same as usual, and in 1892, instead of being excessive,

* In paragraph 14 this is said to be 25·9, but this seems to be a misprint.

as it was in Godavaria and Kurnool, it was deficient. It is not possible to connect cholera prevalence or abeyance in these districts with any known meteorological phenomena. In all three of them high prices for food ruled, but, as already noted, this was a condition common to the whole Presidency. In several instances an explanation is sought for in the supposed introduction of the disease by pilgrims or others, but even if this statement could be entirely depended on, they explain none of the phenomena of the epidemic—neither its prevalence in one part, nor its comparative absence in another, or the extraordinary localization of the disease as represented by the fact that of all the villages throughout the Presidency only 17·5 per cent. returned deaths from cholera, and that the highest percentage in any district was not more than 36. When we remember the continuous presence of cholera in nearly every district throughout the entire year, this result is very remarkable and difficult to reconcile with the incidents purporting to account for the facts by importation. We entirely agree in the observation of the Sanitary Commissioner in summing up the events of the year that “no new light has been thrown on the etiology of the disease, but there is sufficient evidence to show that insanitary conditions tend to localise cholera, and that the best way of preventing the origin and spread of cholera is to remove all local insanitary conditions and carry out the sanitary measures which are known to be antagonistic to the prevalence of the disease.”

7. *Small-pox and Vaccination.*—Of small-pox there were 43,757 fatal cases in 1892. During the previous 20 years the number has fluctuated between 88,321 and 14,529. The figures for both 1891 and 1892 are indicative of greater small-pox activity than there had been for a considerable period. In the year under report the highest small-pox mortality (4·4) was in the Malabar district, and then come 3·5 in Kistna and 3·0 in Godavari. The lowest, 0·06, was in Madras. In Malabar the people are reported to be much opposed to vaccination. In Madras, on the other hand, vaccination is “carried on in a most efficient and satisfactory manner.” The results in this town certainly speak well for the protection which vaccination affords. In 1884 small-pox carried off 3,997 persons. In May of that year vaccination was made compulsory, and the annual death-rate from small-pox since then has never exceeded 0·2 per 1,000. The mortality of 19·9 from small-pox in the municipality of Cochin during 1892 presents a noteworthy contrast. More information might be given on the connection between the amount of successful vaccination over a series of years in each district as compared with the deaths from small-pox during the same period. Statement I. of the Vaccination Report contains some data on this important point, but facts which are presented in tabular statements, without particular attention being drawn to them and to what they teach, are apt to make very little impression. The evidence in favour of vaccination ought to be very clearly set forth, and there ought to be no difficulty in obtaining it, seeing that since 1881 the number of persons successfully vaccinated in the province has risen from 543,093 to 1,049,505 in 1892–93. Such experience as that of Madras town above referred to cannot be too widely made known, as the best means of overcoming prejudices against vaccination.

8. *Fevers.*—The extreme prevalence of fevers in the Madras Presidency is indicated by the facts that the number of deaths recorded under this head in 1892 (280,627) is greatly in excess of that of previous years, and also that in 16 out of the 22 districts the fever mortality was higher than the high ratio of 1891. The district rate varied between a minimum of 2·2 in Tanjore and a maximum of 22·8 in Kurnool. Much of this disparity seems to be due to uncertainty of diagnosis and varied procedure in different places. What is returned as a death from Fever in one place is returned under All Other Causes in another place. If, for example, we take the two extremes of fever mortality above noted, we find that the differences in the ratios under All Other Causes in those two districts are just as marked, but in the inverse direction, and the general effect is to diminish greatly the discrepancies in either taken separately. The figures for those two districts and two others added to illustrate this same general fact stand thus :—

	Mortality from		Total.
	Fevers.	All other Causes.	
Kurnool	22·7	4·5	27·2
Tanjore	1·9	18·5	20·4
Bellary	10·3	12·4	22·7
Cuddapah	16·3	3·2	20·0

The high fever mortality of 1892 seems undoubtedly to have been largely dependent on heavy rainfall and dear provisions, but with so much uncertainty attending the statistics of fever deaths it would not be safe to take them alone as any guide to the relative prevalence of fevers in different districts.

9. *Local Conditions.*—It is safer to take the death-rate from all causes and compare that with the local conditions as respects drainage, water supply, and conservancy, and that we have the opportunity of doing in the statements containing an abstract of the sanitary reports of municipalities and of those of the local fund circles. In addition, there is a separate sanitary estimate of villages in each of the registration circles, but here the death-rates are not given as they might be with advantage. If we take the municipalities first, there are numerous instances of high death-rates being associated with great sanitary evils. At Anantapur, for example, with a death-rate of 36·3, “cesspools abound.” At Ellore, with 31·2, “house sewage flows into cesspools, public drains, or into streets,” the water is “bad.” In Kurnool (55·2) “about 400 cesspools exist.” At Periyakulam, with 38·2, “cesspools

exist," and the river, which is the chief source of water-supply "is subjected to much contamination." We need not multiply examples of this kind in the municipalities, or point out others of a like nature in the local fund and registration circles. The facts are already well known to the authorities, and what is of more importance, they are doing what they can to remedy them. It is very important, however, to keep all the facts concerning insanitary conditions perpetually in view until they have been remedied, and therefore we attach much value to these sanitary surveys, even though they involve repetition from year to year.

10. *Sanitary Improvements by Municipalities and other Local Bodies.*—The improvements carried out by the municipal councils and district boards are described by the Sanitary Commissioner in Section IX. of his Report. They embrace (a.) the sinking, cleansing, and repairing of wells; (b.) the construction and repair of drains, public latrines, markets, &c., and (c.) the improvement of village sites. Statements are given to show how much was expended by each municipality and district board under these various headings, what was their estimated income, and what proportion of this was devoted to sanitation. Full particulars are also given of the conservancy establishments in each municipality, and of the extent of latrine accommodation which has been provided in proportion to the population. The information is full, and arranged in such a way that the Sanitary Commissioner can see at a glance the position of each local authority in respect to sanitary matters. In the municipalities Rs. 15,39,485 were assigned for expenditure on sanitation during the year, besides Rs. 6,31,741 allotted by the district boards. The results generally are gratifying. We have also the assurance of the Sanitary Commissioner that "there is no doubt that progress in sanitary matters is being made in most municipalities, and that many chairman and municipal councillors are thoroughly aware of the close relation that exists between the sickness and mortality from which the people annually suffer and the insanitary conditions among which they live, and, as far as lies in their power, do all that is possible with the means at their disposal to remove existing defects, and adopt measures to protect the public health." We further learn that, even in the villages, which are necessarily the most difficult part of the community to deal with in this respect, improvement is being effected in all districts.

11. *Sanitary Engineer's Report and larger Sanitary Works.*—As already mentioned the separate Report of the Sanitary Engineer deals with the improvements in drainage and water-supply, and it is a very satisfactory and promising record. We can only state generally what has been done during the year. Thirteen towns were surveyed, and levels taken in view of projects for water-supply and drainage, and in seven others preliminary steps were adopted for similar objects. Plans and estimates for such works in six towns were sent in and awaited the sanction of the Government, but it was found necessary to abandon three of these for the present, as being beyond the means of the municipalities concerned. In nine towns works for water-supply and drainage were either in progress or had been completed during the year. In five other towns works having the same object, which had received sanction, awaited the provision of funds for their commencement. The want of funds necessary for great works of improvement is felt in Madras, as it is in every other Indian province. The Sanitary Engineer observes, "The financial difficulty is almost the only real difficulty of the sanitary in India. The difference of habits from European races can be met and provided for, prejudices against a proper drainage or water-supply have almost disappeared, but the financial difficulty only grows stronger."

12. *Sanitary Board.*—No change in its constitution has taken place, it is composed as before of two members, the Sanitary Commissioner and the Sanitary Engineer. They exercise a general supervision over the municipalities and district boards, and all estimates for sanitary works, whether original or only for repairs, require their sanction before being put into execution.

8th June 1894.

No. 11.

MEMORANDUM by the ARMY SANITARY COMMISSION on the REPORT of the SANITARY COMMISSIONER of BOMBAY for 1892.

1. *Examination of Statistics.*—As usual the statistics of both births and deaths have been carefully examined in this Report. In the Bombay Presidency there are 285 separate registration circles, of which 56 seem to be towns and the remaining 229 rural tracts. According to the instructions lately issued by the Government of India, all these appear in detail in Forms I. and II., which, we would suggest, might be further improved and made more convenient for comparison and other reference if a serial number were given to the circles throughout, and not merely a serial number for the districts. In addition to analysing these and the other annual forms in his Report, the Sanitary Commissioner deals in detail with individual districts, and for each of them furnishes supplementary tables in which the birth and death rates for every registration circle are compared side by side, as well as the causes to which the deaths are ascribed, and although this involves a considerable amount of repetition, there is no doubt that the facts of the year are in this way presented in a very striking manner, and in one calculated to prove very useful to the local authorities who have primarily to do with the collection of these statistics. Some information is given regarding the assistance rendered by the vaccination staff in the examination of the primary registers, but details of the results would

be of interest, not only as regards the inspections made by them, but also as regards the inspections made by the Sanitary Commissioner himself, by his deputies, by the Civil Surgeons, and by all other officers on tour who have been called on to perform this duty.

2. *Births*.—The general birth-rate of the Bombay Presidency, deduced from the statistics of 1892, was 34·57 per 1,000, the highest of any province during the same year being 39 in the Hyderabad Assigned Districts. For the previous ten years the average annual ratio in Bombay was 35·16, the fluctuations in the yearly figures running between 38·97 and 29·86. The birth-rates of the later years have been above those of the earlier ones, which is a sign that there has been some—though not any great—improvement in the registration, for, even if taken by itself, without further evidence of inaccuracy, it is beyond question that the actual birth-rate must be considerably in excess of 34·57 per 1,000. Such further evidence of inaccuracy is supplied by the details regarding different districts and registering circles. As regards the proportion of male and female children born, the Sanitary Commissioner cites nine districts in which the percentage of males exceeded the general average to a marked extent, this percentage in one case, that of Thar and Parkar, amounting to 133. And if we examine the details for separate circles we find an even more remarkable excess of male births in some few of them, while in others, on the other hand, there is just as remarkable a deficiency. as for example in Belgaum town, where they equalled only 68 per cent. of the female births. Again, the district rates display extraordinary fluctuations—between only 16 in Thar and Parkar, where registration is still admitted to be most imperfect, and 46 in Nasik. Assuming that every rate not over 35 per 1,000 must be inaccurate, we find from the diagram of rural circles that only 123 of them fulfil this condition. In many of the districts the circles of rural registration nearly all come within the areas of default. After many years of registration this result is by no means satisfactory. In the 56 towns for which separate statistics are given, there seems to be no greater accuracy than in the rural circles. In them the birth-rate ranges between 16 and 53, and there are only 25, or less than one-half, where the rate exceeds 35, and which can therefore be regarded as possessing even the semblance of accuracy.

3. *Deaths*.—In examining the figures of death registration, it is not possible to speak with the same confidence as to the evidence they afford of careful or neglectful registration, because in India death-rates vary enormously from one year to another. All we can say is, that in many cases those recorded in this report for 1892 seem most improbable. Among rural circles they vary between 7 and 65 per 1,000. Among the towns the range is between 16 and 63. In looking at the details of Form II. attention is at once drawn to the very different death-rates recorded in adjacent places, but experience shows that this alone forms no ground for doubting the statistics, for there is nothing more noteworthy in the history of disease than its localization. The year was certainly most unhealthy and the total number of deaths recorded was nearly 100,000 in excess of the maximum of any of the previous ten years. In 1891, which heads the list for this period, the number was 513,132, but in 1892 it rose to 611,742. Influenza in Sind and Gujerat, cholera all over the Presidency, and fever in the autumn, more especially in Gujerat, were the chief diseases under which this great mortality was registered, and these again seem to have been at least in some measure due to great scarcity of food in parts of the south during the early months of the year and unusually heavy rain in September. Great as the mortality was as compared with other years, it is to be noted that it fell very far short of the results in the Punjab, where the death-rate equalled over 49 per 1,000, and the rate for fevers alone (34·83) was more than the death-rate due to all causes in Bombay (32·50). Here, notwithstanding the unusual loss of life, the births still exceeded the deaths by 2·07 per 1,000, whereas in the Punjab the deaths exceeded the births by 11·32.

4. *History of the Chief Diseases: Cholera*.—As already stated, a severe epidemic of cholera was one of the main causes of the great mortality of the year. The total deaths recorded under this head was 42,900, or 25,050 more than in the preceding year. The death-rate equalled 2·28 per 1,000 for the Presidency as a whole, but, as we shall see presently, the district rates of which this is formed varied greatly. The disease was present in one or other district during the entire year, but in the first three months it was almost entirely confined to Dharwar, where more than 3,000 fatal cases occurred during that period. After that the disease became more general. In July it was attacking every district except one. In that month it attained its maximum and then declined, but it had not disappeared from the province in December. The mortality this epidemic occasioned varied between 7·91 in Dharwar district and 0·08 in Ratnagiri. Form VI. shows that many of the towns suffered even more than Dharwar, the cholera mortality having been 11·69 in Hyderabad and 12·11 in Karachi. Of 285 circles of registration 237 returned deaths from cholera, but these were limited to 3,080 out of 25,206 villages. The map shows very clearly the relative intensity of the disease over different parts of the province, and full details are also given illustrating its incidence in the different circles. In some places the disease is attributed to importation, but as the evidence on this point is not recorded in full it is not possible to judge what value ought to be attached to it.

5. *Insanitary Conditions in connection with Cholera*.—This, however, is but of small moment, for even if the epidemic were proved beyond all doubt to be due to importation, no means could possibly be devised to prevent it. Much more important is it to examine the sanitary condition of places which suffered. The Sanitary Commissioner, for example, mentions 11 towns in which the death-rate from cholera exceeded 5 per 1,000, commencing with Hyderabad, already referred to, with its ratio of 11·69, but no description is given of their state in respect of drainage, water supply, and conservancy. We turn to the sanitary estimate of towns and villages which forms Appendix III. for information on these points, but have been unable to find it. Some of the places seem not

to be entered at all, and in regard to others the data are scant. It would seem that this sanitary survey includes only those places inspected by the Deputy Sanitary Commissioners during the year. The death-rate of each place moreover is wanting. We observe that it is given in Appendix VI. in connection with civil sanitary works, but it would find a much more appropriate place in conjunction with a description of the sanitary defects. A more complete form of return, such as we have previously recommended, and which would avoid needless repetition, is obviously much wanted, and we trust that it may be supplied in future years, care being taken to give full information under every heading it contains. From a practical point of view, it should be borne in mind that this comparison of death-rates and local insanitary conditions is really the most important part of the whole Sanitary Report. Appended to the Sanitary Survey Statement are some extracts from reports by Civil Surgeons. As bearing on cholera prevalence, we may remark on the "pits in which night soil is deposited" at Satara, and also the "proper cesspools" referred to at Shikarpur and Upper Sind frontier. Both pits and cesspools of all kinds are most objectionable methods of disposing of night soil, and should not be mentioned except to point out the dangers to which they both give rise.

4. *Small-pox and Vaccination.*—Although small-pox added only 15 per 1,000 to the total mortality of the year, it caused very nearly double the number of deaths it did in 1891. The highest ratio in any one district was 67. The towns also show generally low rates, anything above 20 per 1,000 being rare, and the maximum only 3.09. In paragraph 85 a statement is given showing for each district the number of deaths registered as due to small-pox during each year from 1881 to 1891, and the ratio of successful vaccinations per 1,000 of population. No comments have been made upon it; and yet, as concerns the efficiency of the Vaccination Department, the influence of vaccination on small-pox is the one point that demands the closest attention. All else concerning vaccination, the number of operations performed, the degree of success claimed, and all other particulars are of no importance whatever compared with the influence of vaccination in diminishing small-pox. This is the one and only true test to which the work of the Department must come. It is, therefore, of great moment that the figures for a series of years of both vaccination and small-pox should be examined side by side, and that the conclusions which these figures warrant should be carefully weighed. In its present shape, however, the statement cannot be made much use of. Instead of the annual number of deaths the death-rate in each district should be shown, and then the results arrived at over a series of years compared. It is not understood why the year 1892 is omitted from this statement. As a whole, the evidence in favour of the excellent work done by the Vaccination Department of the Bombay Presidency over a series of years is strong, but the more strikingly it can be exhibited the better, for there could be no more effective means of overcoming prejudices and demonstrating the real protection from small-pox which successful vaccination offers. Although the work of 1892-93, as shown in the separate report on vaccination, was somewhat less than that of the previous year as respects both primary cases and re-vaccination, it compares favourably with that of other years.

7. *Fevers.*—The deaths from this cause numbered 438,038, being 69,125 in excess of the total of 1891, which, in its turn, had shown the heaviest mortality under this head of all the years of which the figures are compared. It is worthy of notice also that the marked increase of 1892 was very widely diffused, every one of the 24 districts, except two, returning a higher ratio than it did in the previous year. It was, however, in Gujerat and Sind that the fever epidemic was most severe, the highest ratio of deaths being in the district of Ahmedabad, where it attained to no less than 41.41 per 1,000. The fact that the maximum monthly mortality from fevers took place in January seems to point unmistakeably to other causes having been at work in addition to those which are classed under the general head of malaria, but beyond the incidental mention of the fact that influenza was prevalent in several parts of the Presidency, and that the epidemic of this disease, which commenced in the end of 1891 in Gujerat and Sind, continued in 1892, there is no information regarding this important event in the sanitary history of the year. No great light could be expected to be thrown upon it by the mortuary statistics, in which influenza would, in all probability, nearly always be classed as fever, but a more detailed examination of the monthly returns, taking in particular those districts which suffered most in 1892, would have afforded interesting data such as might have been employed for estimating the loss of life that ought to be apportioned to influenza. Comparing the results recorded in this report with those recorded in the Punjab report for the same year, there is a similarity in the matter of fever between the experience of Sind and Gujerat and that of many districts of the Northern Punjab which is very striking, and which compels the conclusion that some great and widely acting cause must have been at work in both about the same time. In both there was excessive rainfall and food also was dear. The influence of these factors on the mortality from fevers and other causes in the Bombay Presidency during 1892 is so far illustrated in statements in which the mortuary statistics are compared with the meteorological conditions and the prices of food over a series of years. These figures are given without remark, but it is very desirable that they should be carefully analysed and that it should be stated whether they afford grounds for any definite conclusions. This can be properly done only by the Sanitary Commissioner, who is acquainted with the geographical, geological, and other local conditions, which ought all to be taken into account.

8. *Sanitary Works.*—Information regarding sanitary progress made during the year and the action taken to assist it is contained in remarks of nine municipal towns which the Sanitary Commissioner visited, in the Annual Report of the Sanitary Board which forms Appendix II., and in the last column of the Sanitary Estimate of Towns and Villages, which is headed "Measures adopted." This last, we regret to see, is to a large extent blank. The Sanitary Board had many important matters under their consideration during the year—projects for water-supply and drainage plans, estimates, &c.—and it may therefore be anticipated that the next annual Report will chronicle much valuable

work done as the result of these preliminary operations. At Ahmedabad we observe that sewers have been laid in one section of the town, and that the liquid is pumped up to a sewage farm which had been recently started.

§ 6. *Sanitary Board.*—The annual report of this Board has been already referred to. No change has been made in the constitution of the Board, which consists of two officers, the Sanitary Commissioner, and the Sanitary Engineer, who was added in January 1892.

10. *The Pilgrim Traffic to Mecca*.—The report of the health officer of the port of Bombay is an interesting record. We shall refer only to that portion of it which deals with the Mecca pilgrims, because we would suggest that more details on this important question might be given every year with advantage. The experience of the recent International Sanitary Conference at Paris has shown how important it is in the interests of India that all the facts on this subject should be accessible. We believe that they do not by any means bear out the accusation that cholera outbreaks at the holy places have been caused in any case by vessels transporting Indian pilgrims to the Red Sea. We believe, on the contrary, that when cholera does attack these places it has advanced along the land route through Arabia, but as this is a disputed point nothing but carefully collected evidence can settle it. On this account means, we suggest, should be taken to collect the facts concerning the pilgrims leaving all Indian ports every year, so that they may be collated in the Annual Report of the Sanitary Commissioner with the Government of India, or, if the alternative be considered preferable, they might be collated by the Port Health Officer of Bombay who already has to deal with the great bulk of them, and has given much valuable information concerning those who embarked from Bombay. We shall merely indicate generally the various points in regard to which data should be collected every year. They are as follows:—

- (a.) The exact manner in which the medical inspection of the pilgrims is conducted before they leave Bombay.
- (b.) The number rejected, and causes of rejection.
- (c.) The number of paupers.
- (d.) Name and tonnage of each pilgrim vessel, with date of departure and number of pilgrims on board.
- (e.) The number and causes of deaths after departure, with exact dates, especially regarding any cases that appear to have been of a cholera nature.
- (f.) The experience of the pilgrims at Camaran.
- (g.) Number and causes of deaths on the return voyage.
- (h.) Number of pilgrims of the year who returned, indicating the proportion missing.

Many of these details are already clearly given by Surgeon-Captain Crimmin, but it is desirable that the statements employed for the purpose should be on one uniform plan, and that they should be procured from all Indian ports whence pilgrims to Mecca embark.

8th June 1894.

No. 12.

MEMORANDUM by the ARMY SANITARY COMMISSION on the REPORT of the SANITARY COMMISSIONER of the HYDERABAD ASSIGNED DISTRICTS for 1892.

1. *General Character of the Year.*—The year 1892 in this part of India presented a marked contrast to its predecessor. The one was healthy, and the other unhealthy. This fact is brought out prominently in the general death-rate which fell from 40·6 in 1891 to 28·8 per 1,000 in 1892, and it is worthy of notice that this great difference was not due to the special absence of sickness during 1892 in one or more places where it had been prevalent during the previous year. In every district there was a more or less marked diminution in the death-rate, and, therefore, one may safely conclude that there was an equally decided reduction in the amount of sickness among the people. The same contrast is observable if we follow out the comparison in greater detail, for of the 33 towns for which separate statistics are given, all but one yield a lower death-rate and, in most cases, a much lower death-rate, than they did in 1891. In the one exception the difference is trifling. That some great general causes were at work throughout Berar which rendered the population more subject to sickness and death during 1892 than they were during the following year is self-evident, and experience in India has shown that similar contrasts are to be found not only over a single province but over much larger areas. Still the fact, self-evident as it is, is often overlooked, and epidemics are attributed to local and accidental causes which are totally inadequate to account for them. In accordance with a suggestion which we made some time ago, more detailed information is now given regarding the meteorology of the year and the current prices of food—two important factors which, doubtless, have much to do with the health of the people; but the data in the report do not warrant any decided conclusion being drawn except that, as a rule, though not an invariable one, increased rainfall was attended with increased sickness. At the same time it must be borne in mind that in a matter of this kind the comparison of only two years is insufficient, and that sound conclusions cannot be drawn until the data have been collected and compared over a considerable period.

2. *Continued attention to Registration.*—Continued effort has been made to render the record of births and deaths more accurate. Much progress, as we have had occasion to remark in noting on the reports of former years, had already been made in Berar towards this most important object, and the further information now furnished shows that more has been done in the same direction. In many of the districts inspection of the registers to a large extent has been carried out in the course of their tours by district officers, police officers, the vaccinators, and also by the Sanitary Commissioner himself, and although the results noted are very various and, in some instances, especially in one or two of the larger towns, indicative of much neglect, they show on the whole that a great work is being successfully carried on under no small difficulties. There is, moreover, reason to believe that now the inspections have been more fully established, the expectation of a visit from an inspecting officer will tend to the registers being more accurately kept. The Commissioner, we are glad to observe, has issued instructions "which must have the effect of inducing revenue and police officers to inspect the registers of births and deaths more systematically and frequently than hitherto, and of securing further improvement in registration generally." It would add much to the usefulness of all such orders, by keeping them prominently and permanently before those concerned, if a copy of them were appended to the Annual Sanitary Report, which would thus become, as it ought to be, the recognised repository of all information and orders regarding the special subjects with which it has to do.

3. *Registration of Births and Deaths in relation to the Census.*—In annotating on the Berar Sanitary Report for 1891, we looked forward to having in this Report for 1892 a full discussion of the ten years' birth and death figures in conjunction with the results of the Census of 1891. Delay in the issue of the Census Report has no doubt interfered with this being done, but we trust that it may not be lost sight of, and that, though late, full advantage may be taken of the opportunity of applying such a valuable check on the figures. In some of the other provinces, the main data necessary for such a comparison were obtained in advance of the full data to be supplied by the Census Report, and no doubt it is of great advantage to discuss these matters while the interest in them is still fresh and the facts may be more easily used for practical purposes, such as pointing out discrepancies and otherwise, leading the way to more accurate registration.

4. *Births.*—There was a diminution in the birth-rate, which fell from 42·8 in 1891 to 39·9 per 1,000 in 1892. It is worthy of notice that reduction occurred not only over the province as a whole, but in every district taken separately. From this remark the Sanitary Commissioner excepts Akola. He says, "there is a decrease of births in all the districts except Akola," and the same is noted in both the Commissioner's and Resident's observations on the report; but this statement is not borne out by the figures given in Table I., paragraph 7, where the birth-rate for 1891 in the Akola district is entered as 47·6 for 1891 and 43·7 for 1892, or a reduction of 3·9 per 1,000, and on reference to the report for 1891 and to the Statistical Tables for 1892, these figures seem to be correct. In almost every town also out of the 33 towns for which the figures of the two years are compared, there is more or less reduction. Only seven show an increase. In all the others the birth-rate fell, and in several the fall is very marked, as in Balapur from 48 in 1891 to 36 in 1892, and in Jamod from 61 to 42. No explanation is given of the reduced birth-rate, and the subject might have been more fully discussed with advantage. The result is the more remarkable because the year 1892, as already shown, was decidedly more healthy than 1891, but much of the diminished birth-rate of 1892 may have really been due to the unhealthiness of 1891. Without a record of the births by months and a comparison of the monthly figures with those of other years, it is not possible to form any conclusion on the point, but it is one which is of interest and might receive attention in future reports. Form No. I. in the Appendix, the only one which deals with births, has now been expanded so as to show each registering circle separately. This can easily be done in a small province like Berar, but in the larger provinces it would involve the expenditure of many pages. In Berar there are only 100 circles of which 33 are towns and the others rural. There is, however, a discrepancy in the matter which needs explanation, for whereas the number of registration circles in Forms I. and II. appears as 100, the number in Forms Nos. VII., VIII., IX., and X. appears as 121. In the North-West Provinces and Oudh the circles number more than 1,100. The results in Berar generally for 1892 are indicative of careful registration. There are still a few taluks, as brought out by the summary given in paragraph 8 (Table No. 3), which need looking after, such as Kelapur in Wun and Mekhar in Buldana, where the range between the minimum and maximum is high; but as the population of each is not given, it is not possible to say how far the result may be due to the fluctuations which are inseparable from dealing with small numbers. In any comparisons of this kind that are made it would be more convenient if the registering circles were regarded as the unit, and reference made only to them. In the Amraoti district, for example, from Table 3 there appears to be 4 taluks and 15 rural registering circles; but how these registering circles are ranged in the taluks is not clear, either from Table 3 or from annual Form No. I.; whereas if the registering circles alone are dealt with, full particulars regarding them are given in the No. I. Form, and comparison is simple. In 1891, owing to the unhealthiness of the year and the consequent high death-rate, the births exceeded the deaths by only 2·2 per 1,000 of population; whereas in 1892, even with a diminished birth-rate, the excess of births was 11·1 per 1,000. In only 9 of the 100 registering circles during 1892 did the deaths exceed the births. Form No. I. has been further improved by including a separation of the population according to sex, an item of information which was formerly wanting, but is of great importance in considering birth-rates. Some few of the ratios recorded in 1892 are so high as to suggest the advisability of careful local inquiry concerning them. On the other hand, there seems to be uniform testimony on the part of all the inspecting officers to the effect that when errors have been discovered in the registers they have been in the way of omissions,

and that in many places the birth-rates were really higher than those which have been recorded in the statistical tables.

5. *Deaths*.—We have already noted the great reduction in the mortality for 1892 as compared with the year previous. The total number of deaths in the province fell from 115,558 to 82,124. There was reduced mortality not only in the province as a whole but in every district of which it is composed. We have already remarked on the widespread character of the general influences which affect the health of the people, and the truth of this is well illustrated in the history of Berar. The following are the district death-rates of the province, during each of the last five years:—

Per 1,000 of Population.

	Amroati.	Ellichpur.	Wun.	Bassim.	Akola.	Buldana.	Provincial Total.
1888 - - -	25	26	19	21	25	29	24
1889 - - -	44	40	37	49	39	44	42
1890 - - -	37	35	29	30	36	40	35
1891 - - -	42	45	30	35	47	41	40
1892 - - -	28	33	24	26	31	30	28

It will be seen that although the ratios of increase and decrease varied greatly, they affected the whole province. In 1889 there was a rise in the death-rate of every district. In 1890 there was a fall in the death-rate of every district. In 1891 again there was a rise all round, and then again a general decline in 1892, manifested not only in all the districts taken one by one, but also, as already mentioned, in all the 33 towns with one solitary exception. There is thus ample evidence of great general influences having been at work, but it is with the local influences that the Sanitary Department has mainly to do, and the account which is given of them is very unsatisfactory. In six of the towns which are specially named by the Sanitary Commissioner, the mortality varied between 39 and 56, and regarding them he says, "they are all in a most insanitary condition with an impure water-supply." The chief cause of death in them have been fevers and bowel complaints, and no improvement can be expected in these results so long as existing evils are allowed to continue. Form No. II., which deals with the general distribution of the deaths, has now been expanded in a similar way to that adopted with No. I., so that the results in each registering circle can be considered separately, and in this way attention is at once drawn to those places which have suffered most, and which therefore most urgently require to be taken in hand.

6. *History of the Chief Diseases. Cholera*.—The reduced mortality of 1892 was manifested under every heading except small-pox and injuries, under both of which there was a slight increase. The figures for the two years stand thus and the contrast between them is very marked:—

	Number of Deaths.		Death rates.	
	1891.	1892.	1891.	1892.
Cholera	7,958	2,030	2·8	·7
Smallpox	34	68	·01	·02
Fevers	49,850	41,661	17·5	14·6
Dysentery and diarrhœa	22,007	11,200	7·7	3·9
Injuries	1,090	1,140	·4	·4
Other causes	34,619	26,025	12·2	9·1
Total	115,558	82,124	40·6	28·8

The deaths from cholera it will be seen fell from 7,958 to 2,030. The disease, although so much reduced, was not confined within a more limited area than it had been in the year previous. It was present in every district for at least three months out of the 12, and for nine of these it did not leave the province, but the diminished intensity of the producing cause is indicated not only by the smaller number of deaths but also by the much smaller number of villages attacked. The figures given in the two reports stand thus:—

District.	Number of Villages from which Cholera Deaths were reported.	
	1891.	1892.
Amraoti	100	22
Ellichpur	57	15
Wun	48	16
Bassim	61	11
Akola	117	28
Buldana	149	53
Total	532	145

The total number of villages in Berar is returned as 5,718. These figures are very striking, and have a direct bearing on the causation and, what is still more important, the prevention of cholera. At six places where outbreaks occurred the disease was reported to have been due to importation. But even if this had been proved beyond all manner of doubt it would afford but little or no practical help in dealing with the question. It is simply impossible to devise measures which could prevent such importation, but, happily, the general history of the disease, as indicated in the figures above cited, shows very clearly that far too great stress has been laid on this supposed cause of cholera epidemics, and that other causes have to be taken into account which fortunately can be dealt with much more easily and effectively than attempts at controlling the free and unrestricted movements of the people. These causes are the local insanitary conditions which so frequently prevail in Indian towns and villages, and of which examples are not wanting in this report. Balapur in the Akola district, which suffered more than any other place in Berar, is described as "one of the filthiest towns of the province." The town of Hiwarkhed, which stands next in order of cholera mortality, is spoken of in the sanitary estimate as a place where the surroundings are "very filthy. People defæcate "anywhere and everywhere, and the fetid odour pervades the approaches to the place. Cesspools "and accumulations of refuse in house enclosures." With such a state of things it is easy to understand the prevalence of disease and at the same time to devise the measures of improvement which it is so very desirable should be carried out.

7. *Small-pox and Vaccination.*—As already mentioned there was an increase of small-pox. As a matter of fact, the deaths under this head in 1892 were just double what they had been in 1891—68 in one year compared with 34 in the other, but even the higher figure is so small that the disease was still very slight. Five of the six districts furnished deaths, and they were distributed over 23 villages and one town—the town of Amraoti where a solitary fatal case occurred. The statistics of small-pox in Berar generally bear testimony to the excellent work done by the vaccination branch of the Sanitary Department. Small-pox, like other diseases, has its periods of abeyance and of epidemic prevalence, but the records show that during the last 12 years the results have been much more favourable than during the 12 years before that. During the first 12 years, 1869 to 1880, the total number of deaths from small-pox was 38,840, whereas during the second 12, or from 1881 to 1892, the number was only 8,828. In the separate report on vaccination for 1892–93, the evidence in favour of the protection afforded by vaccination is given in an interesting table, in which the extent of vaccination and the mortality from small-pox are compared for each year, commencing with 1868. Taken in averages of five-year periods the results stand thus:—

	Successful vaccination per 1,000	Mortality from Small-pox per 1000.
1st period, 1868–72	8.92	2.02
2nd " 1873–77	25.72	1.56
3rd " 1878–82	31.2	.58
4th " 1883–87	34.68	.38
5th " 1888–92	35.8	.2

This is very satisfactory and especially the work done in 1892–93, whether measured by its extent or the percentage of success or the proportion of the children born during the year who have been protected. It is gratifying to find that the people are beginning to realise more fully the benefits of vaccination.

8. *Fever and Other Causes of Death.*—It is doubtless quite true, as the Sanitary Commissioner remarks, that the great heading of Fevers, under which the largest share of the mortality in every province is invariably recorded, includes many disorders of which fever is a mere symptom; but there is every reason to believe that the great mass of such cases, and also we may add of those recorded under the head of dysentery and diarrhœa, are due to that general cause, which, for want of a more definite name, is called malaria. How potent and widespread is the influence which this exerts is to be seen both by the large number of deaths these two heads contribute, and also by the general character of the fluctuations in this number which are manifested year by year. In 1892 41,661 persons died from fevers, and 11,200 from dysentery and diarrhœa. The two great heads together account for 18.5 per 1,000, or nearly two-thirds of the total mortality of the province, which amounted to 28.8. And if we look at the statistics of the 25 years which are tabulated at pages 23 and 24 it is surprising how the general character of the year is impressed more or less on every district. In 1892, for example, the deaths from fevers fell to 41,661 from 49,850 in 1891, and this fall was participated in by every district except Bassim, in which the figures for the two years were nearly the same. Under dysentery and diarrhœa a similar result is to be seen, but in a much more decided degree. In 1892 the deaths recorded under this head were little over one-half of the total of the year previous, and in every district taken separately there is a reduction in much the same proportion. Like results will be found if the statistics of other years are examined. The great lesson to be learned from these and other like facts, which might be multiplied almost indefinitely, is that the general experience of a people as regards health or disease in any year is not a matter dependent on accident, that it is governed by general laws, the nature of which we still know little of, and that the greatest aids to health and the most powerful protectives against disease are to be found in measures of local sanitary improvement.

9. *Distribution of Mortality in relation to Local Defects.*—To discover defects in the sanitary condition of towns and villages, and to have them removed or remedied because they are, or at any time may become, causes of sickness and death, is the great work to be accomplished by the Health Department in every province, and annual reports are valuable mainly in the proportion in which they show that this is being done. In this report for Berar the defects are dealt with in the sanitary estimate which covers pages 27 to 39, and again, on page 42, there is some repetition of the same, with a few data added regarding six municipalities. It would be more convenient if the whole information were given in the one form of "Sanitary Estimate," which should be amplified in some such way as that suggested in paragraph 21 of our memorandum on the Report of the Sanitary Commissioner with the Government of India for 1890 (recommendation 3). The form now used gives the death-rate under certain headings, but the total death-rate for each place is not entered except for municipalities; this is indispensable in every case in order that local conditions and the state of the public health may be examined side by side. The state of the drainage, the water-supply, and the conservancy in the towns and villages, is by no means satisfactory. Of this the local authorities are well aware, and they are evidently striving with the small means at their disposal to effect improvements which want of funds and the apathy of the people render very difficult of accomplishment.

10. *Sanitary Improvements.*—In the municipalities much attention was paid to conservancy and 61·1 per cent. of their income was spent on sanitary work. The only large operation on which funds were expended during the year appears to have been the improvement of the water-supply of Akola. It would seem that part of this expenditure was provided by the municipality and part by the Public Works Department, from which last also considerable sums were spent on water supply at Buldana and other improvements elsewhere. The amount of progress made would be more clear if the work done in each place were shown locally and not according to the source from which the funds are obtained. The most important point to know is—what has been done in each municipality or other locality. It would be simple to show this, and in the same form to indicate the department by which the work was done. In the districts, during 1892, Rs. 1,48,571 were spent on "village conservancy, construction and repairs of wells, up-keep of roads, side gutters, watering and planting trees, removal of rank vegetation, &c."

11. *Sanitary Boards.*—This Report and the Commissioner's remarks upon it show that though progress is necessarily slow the work is being taken up in a systematic and practical manner. The survey of towns and villages has been continued. The Sanitary Commissioner held meetings with the District Sanitary Boards, and his recommendations for improvements were recorded. Reports are submitted to show how far, and at what cost these have been acted on, and what part of them still remains to be done. It would seem that the meetings of these Boards take place only once a year. The summary of their proceedings during 1892 shows that the sanitation and water-supply of 140 villages throughout Berar was discussed. In 41 villages improvement in these important matters had been completed, and in the remainder such improvements had not been completed for want of funds or other causes.

12. *Regulation of Fairs.*—In the concluding chapter interesting information is given regarding fairs. It appears that every year 42 fairs are held in the different districts of Berar, and that the approximate number of people attending them is from a few thousand at some to as many as 50,000 at others. It is satisfactory to learn that there has been a general improvement in the management of these fairs as regards conservancy, water-supply, and other sanitary requisites, and that it is part of the recognised duty of Civil Surgeons to see that these important matters are well attended to. In these reforms is the best safe-guard against those epidemic outbreaks of disease to which those attending fairs in India are so prone.

8th June 1894.

No. 13.

MEMORANDUM by the ARMY SANITARY COMMISSION on the ADMINISTRATION REPORT of the COMMISSIONERS of the TOWN of CALCUTTA for 1892-93.

1. *Progress in Sanitation during the last 35 Years.*—This Report has reached us much later than usual, several months indeed after all the other Indian Reports of the year had come to hand, and we have not yet seen the orders of the Bengal Government upon it. Many of the important questions with which it deals have been discussed in previous memoranda, and we propose now to confine our remarks, in the main, to one or two of the most noteworthy points suggested by the history of the year. Before entering on these, however, we may refer to the opening chapter of the report in which a summary is given of the progress sanitation has made in Calcutta during the last 33 to 35 years. For the most part this summary is a reproduction of the principal figures contained in a very interesting paper which was read before the International Congress of Hygiene and Demography, held in London in 1891, by the Honourable Mr. Cotton, who has had many years' experience of Calcutta, and, having been for some time himself Chairman of the Municipality, is well acquainted with the subject in all its bearings. It will not be out of place to repeat a few of the main facts here, because Mr. Cotton's original paper and the Calcutta Municipal Report, although both widely circulated, do not fall into the hands of many who see the Annual Sanitary volume issued from the

India Office, and it is very desirable that everyone, and more especially foreigners, who write at times as if little or no progress in sanitation had been made in India during all the years of British occupation, should realise how much has been done in Calcutta, and how much more is being attempted under very difficult circumstances. As far as possible, the figures have been brought up to 1st April 1893, the day to which the present Report extends. During these 35 years there have been expended,—

	Rs.
On drainage - - - - -	1,11,27,700
On water-supply - - - - -	1,63,00,000
On Bustee Improvement, - - - - -	8,68,961

For this sum have been constructed 43 miles of main or brick sewers and 144 miles of pipes sewers. The number of premises connected with the sewers is 27,560. On 1st April 1893, the daily supply of water averaged 30·84 gallons of filtered and 9·47 gallons of unfiltered water per head of population. The quantity is thus ample and the quality is excellent. In addition to these great works of drainage and water-supply and improvement of the bustees, the amount of refuse removed from the town has quadrupled what it was in earlier years; 277 filthy tanks have been filled up; 88 bathing platforms have been constructed for the use of the poorer inhabitants, and six public squares have been laid out to the great advantage of the localities concerned.

2. *Benefits derived from these Improvements.*—It is during the last 14 years that the chief progress has been made, and the statistics of these years, divided into quadrennial periods, show that there has been a marked reduction in the mortality. In the town proper, notwithstanding the progressive increase of population during the first of them, the deaths numbered 62,226, whereas in the second they were only 49,863, and in the third only 38,089*. The vital statistics of Calcutta are always open to exception, because the conditions are so peculiar. There is a constant change in the population, a continual influx of people seeking work, and a frequent return of others to the country especially among those who have fallen sick. It is more than probable that with the increased facilities for travelling which have been afforded of late years such movements of population have increased, and on this account the statistics of different periods may be vitiated to a certain extent as an index of relative mortality. But although this may be true of the deaths generally, the objection has little force when applied to cholera deaths, for the attack of this disease is so sudden and its progress either to death or recovery as a rule so rapid, that removal can have but a very trifling influence on the record. It is therefore gratifying to find that the reduction in the cholera deaths has been just as marked as the reduction in the general mortality, though the fluctuations in the intensity of the disease from one year to another are as distinct as they ever were.

3. *Rise in Value of Town Property consequent on Improvement in Health.*—Another very interesting and important result of the greater healthiness of Calcutta, which has been brought about by the improvements, is that the value of town property has enormously increased. It is estimated that the value of land in the town “has more than doubled since 1878, and that the increased value “to the owners is about nine crores of rupees.” One practical effect of this remarkable rise ought certainly to be to advance the progress of sanitation in India in a very decided degree. The natives are fully alive to the advantages of health, though not always convinced that it will be obtained by the measures recommended by the sanitary authorities; but when they find that health not only is improved by such measures, but that their property is also rendered much more valuable, they will have a new and powerful motive for supporting the cause of reform. But in order to attain this much desired result, time and patience are essential on the part of the authorities. The evils which have grown up under centuries of neglect cannot be swept away even in a decade. It is essential that we should carry the people with us, they must be educated gradually to understand the value of the changes proposed, and for this purpose they could have no better object lesson than the experience of Calcutta during the last 35 years. We are led to make these remarks by the discussion which has taken place in this and other Municipal Reports on the subject of the building regulations in native towns and cities. We entirely agree with the Health Officer of Calcutta as to the importance of open spaces and other means for ensuring proper ventilation in houses, but under all the circumstances we recognise the wisdom of the course pursued by the Commissioners and approved of by the Government. As Sir Ashley Eden remarked in his orders on the Calcutta Report for 1876, “One case in which native society is induced by conviction to adopt a sanitary theory is worth “hundreds of cases in which they are pressed into submitting to reforms of the benefits of which “they are not satisfied.”

4. *Continuance of Sanitary Improvements.*—The municipality of Calcutta may well be proud of all it has achieved in the face of very great difficulties of all kinds. At the same time it is essential to realize the urgent need for continuing the great improvements which have been effected, and to this the Commissioners, as shown in this report, are fully alive. Among the works which had either been completed, or were in progress during 1892–93, may be mentioned the opening of the Harrison Road, the partial completion of the Lansdowne Road, and of the Puddopooker Tank Square, new settling tanks at Pulta, a flushing reservoir for the Circular Road sewer to hold 300,000 gallons, and a number of other works of more or less magnitude which are fully described in the Report. In the

* This is the statement given in the Calcutta Municipal Report, but it would seem to be to some extent incorrect, and ought properly to stand thus:—

1st period (4 years)	- - - -	52,226 deaths
2nd “ “	- - - -	49,863 “
3rd “ “	- - - -	45,793 “
4th “ (3 years)	- - - -	38,089 “

future three lakhs will be set aside every year for expenditure on the improvement of the suburban area which was incorporated with the town proper a few years ago, and in which much necessarily remains to be done. In all the accounts that are given of work actually completed or in progress little mention is made of the sanitary defects which still exist, and of the measures which are in contemplation for dealing with them. The current work, no doubt, is sufficient to engage the attention of the authorities, but a clear sanitary programme has great advantages, especially if it be drawn up by localities, and contrasted in its progress year by year with the statistics of births and deaths.

5. *Statistics of 1892. Births.*—The vital statistics in this report refer, as usual, to the calendar year, and, in common with many other interesting matters, are discussed fully by the Health Officer. The general birth-rate for the whole town equalled 18·6 per 1,000, which is the highest rate since the town and suburbs were amalgamated. Taken separately, the rate for the town proper was 17·4, which was much the same as usual, and that for the suburbs 21·2, which is the highest recorded. If we turn to Table No. 5 of the Appendices, one of the two tables facing page 148 of Part II. of the report, we find some further details regarding both births and deaths which are worth attention. This table is devised on the model we suggested some years ago, and supplies much interesting and valuable information as to the incidence of both births and deaths according to wards. The general disproportion between males and females in the population, which has been so often referred to, gives a complete explanation of the low birth-rate. Taking the whole area, the males equalled 190 to every 100 females. In the town proper the figure for males was 211, and in the suburbs it was 153. Under these circumstances a greater difference should have existed between the town and suburban birth-rates than that deduced from the records. There are also other unexpected results in the returns from individual wards, though generally the birth-rate increases according as the number of the sexes approximates, and decrease as it diverges.

6. *Deaths.*—The general death-rate was 2 per 1,000 less than in 1891 and almost exactly the same as it had been in 1890, but if the town proper and the suburbs be taken separately we find that in the town proper the mortality in 1892 differed little from that of 1891 (27·1 compared with 27·9), whereas in the suburbs there was a marked reduction from 39·4 in 1891 to 34·8 in 1892. As regards both births and deaths there was thus evidence of improvement, the births were more numerous and the deaths were fewer. If we turn again to Table No. 5, already referred to, we find that in both town and suburbs there are marked variations in the individual wards. In the town itself the mortality ranges between 13·3 and 33·2. In the suburbs the range is between 20·9 and 44·1. In Table 6 the deaths both in town and suburbs separately and in both combined during 1892 are compared with the figures of the previous 10 years and with the annual mean of these figures as recorded under the five principal heads—Cholera, Dysentery and Diarrhoea, Fevers, Small-pox, and Other Causes.

7. *Cholera and Water-supply.*—Of these diseases the only one which calls for special remark is cholera. The year 1892 was one of great cholera prevalence over great part of India, and Bengal suffered from it to a large extent in common with many of the other Provinces. As a whole, the town of Calcutta recorded 2,019 deaths from this cause. In both city and suburbs there was a diminution compared with the year previous, but this diminution was chiefly in the suburbs, where the deaths were little more than half what they had been in 1891. This result is all the more remarkable because in Howrah, which is the other large suburb of Calcutta, and which has generally suffered less from cholera than this suburban area now incorporated with the town, the deaths from cholera instead of being fewer were much more numerous than they had been in 1891. The figures for the two years stand thus :—

		1891.	1892.
Suburban area	- - - - -	1,500*	762
Howrah	- - - - -	490	771

The marked diminution in the suburban area, especially when compared with the very different experience of Howrah, is attributed to the new water-supply which was introduced into the suburbs in 1890, and there seems every reason for believing that this conclusion is correct, and that as the supply becomes more widely distributed, and other sources from which the people draw impure water are shut up, the results may be even more gratifying, and there may be a marked reduction not only in cholera but in all other diseases. We have always insisted on the vast importance to the public health of good and abundant water, and should have been greatly disappointed if the suburbs had not benefited in a marked degree from the great sanitary improvement embodied in the extension to them of the Calcutta water. There is fortunately no difference of opinion among sanitary authorities as to the action that should be taken in this matter of water-supply, but there is a difference in the mode of interpreting the facts. The Health Officer of Calcutta, in common with many other high authorities, believes that a good water-supply is the one great preservative against cholera, because it is through the water that the cholera germ enters the body, and that without the entrance of this germ no one will suffer from the disease. Other impurities are of little or no consequence, except as an index of the danger of cholera germs also being present. Climatic influences and other general causes he regards as matters of comparatively no importance, and that therefore they may be eliminated from

* This is the number given in the comparative table at page 127, but on page 126 and also in Table 6 of the Appendix it is entered as 1,402.

the problem. The one thing to be done is to keep the cholera germ out of the water, and having done that, the community is safe. We are and always have been fully persuaded of the vast importance of a good water-supply as one of the first requisites of health, but we regard it as only one of them, and we are convinced that a good water to be worthy of the name must be free not only from one special element of danger but also from all impurities, every one of which is more or less a source of danger, and having provided such a pure water and every other sanitary improvement that can be obtained we still believe that there are general causes at work with which we are still most imperfectly acquainted, which have a decided influence on the public health, which go a long way towards determining the seasonal prevalence of different diseases, and also towards determining whether the year shall be healthy or unhealthy. Whether these general causes be regarded as climatic or designated by any other name is a matter of little importance, but their existence is self-evident, for it is asserted year after year in the history of epidemic disease, and in none of these histories is it more plainly written than in the history of cholera in and around the town of Calcutta, where the seasonal rise and fall of the disease recur with such remarkable regularity, but varying as regards intensity in one year as distinguished from another, and happily tempered to a large extent in more recent times by the sanitary improvements which have been effected. The Health Officer speaks of the cholera germ as if the existence of such an entity had been demonstrated beyond all manner of doubt. We offer no opinion on this much disputed question, but we recall the fact that only a few weeks ago we were engaged in discussing a special report on this very question by Surgeon Lieutenant-Colonel D. D. Cunningham, who for the last five-and-twenty years has been endeavouring to discover a cholera germ, and as the result of all his painstaking and labourious researches, nearly all of which it is to be observed have been conducted in this town of Calcutta, has come to the conclusion that so far as we yet know there is no germ peculiar to cholera, that certain bacilli, including the one described by Koch are its frequent accompaniments, but that none of these are invariably present, that not one of them is distinctive of cholera, and still less can any one of them be said, with any show of reason, to be the cause of cholera. We have, however, only to do with practical work, and in so far as the water theory of cholera, as it is termed, will aid in urging on the improvement of the water-supply in all towns and villages, we have no fault to find with it, it being understood that this supply is to be guarded against all impurities, and that other sanitary matters, such as drainage, conservancy, and many others that might be mentioned, are also to receive due attention. We have opposed germ theories of cholera when they have been made the ground for recommending quarantine and compulsory isolation of the sick, and other measures of like kind, because we are persuaded that endeavours to carry out such measures must not only end in failure, but also cause much more mischief than they were designed to prevent; but good water is a blessing, regarding which there cannot be two opinions. We have every reason to believe that the improvement in the public health so well begun in the suburban area may become more and more decided, and that Howrah and many other places profiting by so good an example may very soon be induced to provide an equally good water-supply for themselves.

24th October 1894.

No. 14.

MEMORANDUM by the ARMY SANITARY COMMISSION on the ADMINISTRATION REPORT of the MADRAS MUNICIPALITY for 1892-93.

1. *Unfavourable Sanitary History of the Year*.—Although this report is as usual for the official year 1892-93, it deals with the statistics and other sanitary matters generally for the calendar year 1892. It may be said at the outset that, though the history of this year is not so unfavourable as that of the year previous in respect of the public health, it is still very unsatisfactory as compared with the ordinary experience of Madras. In submitting the report to the Government, the Acting President of the Municipality, Rai Bahadur P. Ramaswami Chettiyar, forwards a resolution by the Commissioners in which they record their opinion that "the Report is defective in that it gives no reason for the steadily increasing spread of diseases in the city except fevers, and that the causes assigned for these last do not sufficiently account for the same and the Commissioners are of opinion that the sanitary condition of the city will be considerably improved by better supervision by the Sanitary Department." That there are great insanitary defects still existing in Madras admits of little doubt, and until these have been remedied there can be no great improvement, but the Commissioners do not seem to realise that, even when they have been remedied, considerable fluctuations must still be anticipated in the public health from year to year. General unhealthy influences manifest themselves in one year and even in several years in succession, and are comparatively inactive at other periods. Local sanitary improvements which mean the removal of all local causes of diseases are also, without doubt, the best preservative against such general unwholesome influences, but they can by no means altogether control them, and so it will happen even in the most perfect sanitary conditions that can be created that one year will be distinguished by its healthy and another by its unhealthy character. It is well that this should be thoroughly understood, because, although sanitation can do much, it cannot accomplish impossibilities. The Madras Presidency and, in fact, the greater part of India, has been passing through a period of great sickness and mortality, and the city of Madras has suffered in common with other places. What the general causes were which produced these

unfortunate results we do not pretend to explain, but they were certainly connected with peculiarities of season which brought evils in their train, of which by no means the least was the high price of provisions and consequent distress among the people.

2. *Sanitary Works*.—The Report itself is written by the President of the Municipality, Lieutenant-Colonel Moore, and it embodies as usual information on all public health matters. It is clear and concise, and contains much interesting matter. We shall consider the various items in the order in which they are given, and the first is the progress made in sanitary works. The practical question which the Municipality has to deal with is the removal of all local causes of disease, and the most important part of the report ought to be that which records what progress is being made annually in this great work. Under this head the results of 1892-93 are disappointing. The amount spent was very small, and little therefore was done. It is right, however, to state that an expert (Mr. Cousins) had been deputed to investigate and report on the drainage and water-supply of Madras and that his recommendations had not been received before the year closed. The Commissioners continued to give much attention to the conservancy of the city and had carried out arrangements the good effects of which were soon expected to appear. Among these may be mentioned the more efficient removal of night soil from certain divisions where hitherto this had been imperfectly effected.

3. *Vaccination and Small-pox*.—The next point to which we need refer is vaccination, and the facts here recorded are very satisfactory. The number of operations performed, though somewhat less than that of the previous year, was large; the proportion of infants protected in relation to the number of births and the percentage of success attained are all evidence of good work, more especially as the figures have been tested to a large extent by inspection. The amount of success claimed in primary cases, 99·57 per cent., seems almost too good, and 96·57 in re-vaccinations is difficult to understand. But the most valuable evidence of the amount of good done by vaccination in the city of Madras is to be found in the marked diminution of small-pox. During 1892 only 21 deaths are reported to have been caused by this disease, though there is a slight discrepancy here, as the number given in the Tabular Statements, pp. 209 and 53, is 27. Both numbers, however, are very small, and a low mortality from small-pox has now been secured for a number of years. We have already referred to these satisfactory results in our Memorandum on the Sanitary Report of the Madras Presidency for 1892 as a very striking illustration of the decided diminution of small-pox under the protection afforded by successful vaccination. Fluctuations will occur even with small-pox. In spite of vaccination there will be years of minima and maxima, but so long as vaccination is carefully conducted the range between the two will be comparatively trifling.

4. *Registration of Births and Deaths in relation to the Censuses*.—A comparison of the censuses of 1881 and 1891 with the births and deaths recorded during the intervening period discloses that while the Census of 1891 showed an increase of 46,670 in the population, the excess of births over deaths registered during the 10 years amounted to only 354. The Commissioner attributes the discrepancy in part to immigration and partly to the fact that many of the women of Madras go to the country for their confinement, and that in this way many of the births which really belong to the city are not entered, but it seems probable that births escape registration through neglect. In the city of Madras there is no paucity of women such as there is in both Calcutta and Bombay to account for a low birth-rate, on the contrary the females are in excess of the males. Although, therefore, 36·8, the rate for Madras in 1892, is high when compared with that of European countries, it seems to be below the normal rate for India. Not only is there a general excess of females in the total population of Madras city, but this excess is observable in all but five of the 17 age periods in which it is divided. The female excess is also well marked during the chief child-bearing time of life from 15 to 35.

5. *Registration during 1892. Births*.—The diminution in the number of births in 1892 is attributed with every show of reason to the unfavourable circumstances of the previous year—the scarcity which prevailed, as well as the unusual amount of sickness, all of which tended materially to lessen the reproductive power of the people. The birth-rate of 36·8, which is the average for the city, is 3·1 per 1,000 less than it was in 1891, and 2 per 1,000 less than in 1890, but we observe that it is higher than in any of the years preceding that. If, therefore, the circumstances of 1892 were unfavourable to births as they no doubt were, it follows that the returns for the years anterior to 1890 are indicative of imperfections in the registration. The results for 1892 recorded for the different divisions of the city do not represent such marked contrasts as are observed in other registering circles throughout India. The general average (36·8) is made up of rates between 30·6 and 49·9, and the proportion of male to female births, which as a whole equals 105·3 per cent., fluctuates in its several parts between 102 and 111.

6. *Deaths*.—Although the death-rate was reduced from 5·26 per 1,000 in 1891, the rate for 1892 was still unusually high. In the monthly distribution of the deaths in two years there is a remarkable contrast, for whereas the early part of 1891 was comparatively healthy, the early months of 1892 were the reverse. The deaths of 1891 were chiefly in the later months, but in the later months of 1892 they were much fewer than they had been in the same months of the year previous. In both years the local surroundings as regards sanitation were much the same as usual, and the price of labour was unchanged, but there was one decided difference between them and many previous years, and that was the high price of provisions. This is a factor in its relation to the public health, which, as we have frequently remarked, is often made too little of in the sanitary history of the year, and yet it is one the influence of which is great. The Commissioner is fully alive to this. He says, “prolonged want, due to the continued high price of food, was the principal predisposing cause of the high mortality among the masses,” and this conclusion is fully borne out by the quotations which show that the principal articles of food, rice and ragi, were selling throughout the year, and more particularly

during the early months of the year, at rates far in excess of what they ordinarily were. However perfect other conditions may be, a population that is ill-nourished must be subject to great and severe sickness.

7. *Deaths by Sex and Age.*—There was no great difference in the death-rates according to sex, the proportion of deaths being in that of 92·5 males to every 100 females, a remarkable contrast to Bombay, where, according to the returns, the female death-rate was double that among males. The very high mortality among infants in Madras has long attracted attention. In 1890 this was recorded as 579·7 per 1,000; in 1891 it was 427·5; in 1892 it was 373·3. The figures seem hardly trustworthy, for they do not accord with the general results of the years in question. The year 1892 was a less healthy year than 1890, and yet the infantile death-rate was only 373 compared with 579, a fall of more than 200 per 1,000. Even although all the deaths may be registered, no great reliance can be placed on the ages recorded. As the result of his inquiries into the great loss of life among young children in Madras, the Commissioner believes that it is due to insanitary surroundings, malpractice of midwives, want of care on the part of the parents, and want of proper medical treatment during sickness.

8. *Deaths according to Diseases.*—Among the great heads of disease under which the mortality is registered the most noteworthy is fevers. In 1891 the deaths recorded under this head reached the unprecedented number of 6,731, the highest number of any of the previous 10 years having been 4,685 in 1890. In 1892 the fever deaths have exceeded the previous maximum of 1891 and reached 6,889. The figures of fever mortality show a decided tendency for such diseases to increase of late years. In 1888, which returns the minimum of the 11 years, the fever deaths were 3,372, or not much more than half of the total for 1892. There is always greater or less uncertainty as to the proportion of the total mortality which ought to be attributed to fevers, that is, to malarial fevers, for these are what the term evidently was intended to include; but when the increase of fever deaths is attended, as it is in this instance, with increase of those under all the other heads, or all the others except cholera and small-pox, the greater prevalence of severe malarial disease may be accepted as a fact. The Commissioner accepts this fact for 1892 and the year previous, and would account for it by the polluted state of the ground, arising among other causes from inadequate drainage, from insufficiency of food and clothing, the overcrowding of houses, and want of ventilation. As already mentioned, the Municipal Commissioners are not satisfied with this explanation; but it is difficult to imagine a complication of circumstances more unfavourable to health, and when in addition to these there is superadded the unknown epidemic influence which cannot be explained, but which was present beyond all manner of doubt, as indicated not only by the experience of the city of Madras but also by that of the Madras Presidency generally, and of nearly the whole of India in 1892, the causes assigned seem very ample.

9. *Deaths according to Localities.*—According to locality the deaths during the year varied between 38·5 and 54·1 per 1,000. The Commissioner observes a distinct relation between the death-rate and overcrowding in the divisional area, and also in individual houses. The results seem to be in great measure affected by the number of young children in the population. As we have already said, no great reliance can be placed on the exact ages of those whose deaths are registered, but if we take all those returned as under one year, and add those between one year and five years, the materials for doing which are to be found in the statement on page 228, we accept the total of the two as fairly representing the proportion of young children in each division, and if we compare these totals with the death-rates we find that there is a decided concurrence between the two. In the 2nd Division, for example, which registered the maximum mortality (54·1), there was the greatest proportion of young children (589·2 per 1,000), whereas in the 8th Division with the minimum mortality (38·5) the proportion of young children was smallest (348·5). In fact, with the one exception of the 3rd Division a relatively high proportion of young children and high death-rate go together in all the divisions. It is mentioned as a remarkable fact that the 2nd and 3rd Divisions, where the mortality was greatest, are the best drained and sewered; but when it is nevertheless added that in consequence of insufficiency of the sewers “there is an escape into the subsoil around them,” and that the condition of the subsoil water in this part of the town is very bad, there can be little surprise at the heavy death-rate recorded.

10. *Sanitary Defects.*—A very dark picture is given of the insanitary conditions of Madras. These are discussed under ten separate heads. Some of them, such as the risk of “infection by sea,” are of very minor importance, and any expenditure on means for meeting such a supposed danger, would, we believe, be to divert funds from much more necessary purposes. It is quite impossible to keep up a surveillance over the number of people who go into Madras city by land, and it would therefore be idle to attempt anything of the kind over the few coming by sea. The great dangers to health in Madras are the pollution of the soil, the insufficient quantity and inferior quality of the water-supply, and the want of proper drainage. On this head the Commissioner writes, “The want of proper drains and sewers to carry off the large amount of refuse water from the various domestic operations of nearly half-a-million people is the greatest sanitary requirement of the town.” It would seem from this that under a new system of drainage it was contemplated still to continue the removal of the night-soil by hand. The report of the expert must be awaited, and until it is submitted it would be unprofitable, as the Government of Madras remark, to make any detailed observations on the subject. We trust, however, that before these plans are fully decided on, the great question of the proper mode of removing the night-soil of the city may be carefully considered if, with the introduction of proper sewers, there should be any thought of continuing the present expensive and unsatisfactory system.

19th July 1894.

No. 15.

MEMORANDUM by the ARMY SANITARY COMMISSION on the ADMINISTRATION REPORT of the MUNICIPAL COMMISSIONER of BOMBAY for 1892-93.

1. *General Causes of Unhealthiness.*—The year was very unhealthy—cholera, small-pox, and fevers in particular were prevalent. The total mortality, 32·26, was high and under each of the above heads it showed a considerable increase over the ratio of the previous four years, with which detailed comparison is made. The Health Officer remarks that in the experience of the city of Bombay an abnormal season is always attended with increased sickness and mortality. In 1892, “with a higher temperature, and a higher dew point, there was a higher mortality.” The year 1891 had been memorable for a severe drought, and though this was not followed by actual famine in the western Presidency, it was certainly productive of scarcity and high prices, which had their influence on the food of the people, and were therefore adverse to health. On this important question of food-supply we have found no reference in this report, but as we have already seen in the report of the Sanitary Commissioner of the province food was dear, and to the inhabitants of India any such rise is a matter of much consequence. It is very desirable that in future reports this potent factor should not be left unnoticed. Whatever the general causes of unhealthiness may have been, and how much of the result is to be attributed to each, there can be no question that they did exist, and that they were widely operative over India in 1892. In the Bombay Presidency the year was eminently unhealthy, and if we confine our attention to the districts immediately beside the city the same fact comes out. In both the districts of Thana and Colaba the mortality was unusually high, just as it was in the city, and there was a remarkable prevalence of disease, more especially of fever. There can be little doubt then that Bombay city was suffering from some great general cause or causes which affected a large area.

2. *Local Causes of Unhealthiness.*—But such general causes are as yet obscure and beyond our power to deal with. It is with the local causes of disease that sanitary work has to do, and of these two very serious ones are mentioned as having militated against the health of Bombay city during 1892. They were insufficient drainage and pollution of the ground. The first of them is due to the enormous increase of the water-supply. Compared with that year it has almost doubled, the daily delivery having risen from 16½ to 29 millions of gallons, while there has been little increase in the number of drains. “In more than one-half of the island” it is said, “there are not drains.” The soil pollution is being caused by the stagnation and flowing back of sewage, because the pumping power has been insufficient to empty the sewers. In illustration of the ill-effects which are arising from such a state of things the cases of the two Nagpada sections of the city are cited, and mention is afterwards made of dangers to health existing in other quarters distinguished by high death-rates. In the 1st Nagpada the mortality of 1892 was 40·15, and in the 2nd it was 44·49. The Health Officer refers generally to districts without drainage, on which more than 60 gallons of water per head of population are delivered daily, and which are becoming in consequence polluted and unhealthy. We would suggest that these local conditions should be dealt with more in detail, so as to compare them with the resulting mortality. A statement prepared on the same principle as that adopted in the reports of the Provincial Sanitary Commissioners for setting side by side the death-rates in towns and villages with the description of their state as respects water-supply, drainage, and conservancy, would be most useful, the place of the towns and villages being taken by the various sections of the city of Bombay. The great object is to localise the causes of disease in every one of the sections, to show by the mortuary and other statistics the ill-effects which are arising from such causes, and also the benefits which are derived according to these causes are either altogether removed or partially remedied. This can be done fully only by taking every section of the city and comparing the state in which it is year after year with the deaths recorded in that year. Besides imperfect drainage and soil pollution, there are other evils to be recorded in such an annual history, and among these the overcrowding of ill-ventilated buildings is regarded as one of the most serious affecting Bombay.

3. *Vital Statistics. Births.*—The births were almost exactly in the same number as they were in 1891, the ratio having been 18·84 compared with 18·88. A low birth-rate is a natural consequence of the small proportion of females to males. According to the Census of 1891 the males in the city of Bombay numbered 518,093, while the females were only 303,671. The report states that the birth-rate by classes is evidence that the registration is not very imperfect, because “it bears a direct ratio to the number of females in each community.” It would be interesting to have this worked out in detail, taking either communities by classes, as referred to in this quotation, or by localities as tabulated on page 417A, the object being to compare the birth-rate per 1,000 in each of them with the percentage of females in the population concerned. A comparison by localities would be more useful for practical purposes, as it could be more easily employed for the detection of any neglect in registration than a comparison of classes which are spread, more or less, over all the sections of the city. It would also be interesting to know what steps are taken to supervise the registration and check the returns, a measure very useful in itself, and highly important for the proper work of the vaccinators. The statement at page 417, which contains the results of birth registration from 1866 to 1892, shows that the annual number of births recorded has varied between 3,140 in 1870 and 17,247 in 1880. During the succeeding 12 years the range has been between 14,637 and 16,760. It would seem that, especially in the earlier years, registration of births was much neglected, and it would be

satisfactory to have detailed evidence, both by careful analysis of the results, and a full account of the means by which these results are obtained, that the annual records are now fairly accurate.

4. *Deaths according to Sex.*—The very great mortality among females as compared with male which has been observed in former years was seen again in 1892. The female death-rate (42·42) was in fact very nearly double the male death-rate (26·31). The reasons assigning this extraordinary contrast to the special dangers of child bearing are altogether insufficient. It is quite true that there is an excess of deaths among females during the child-bearing period, say from 15 to 40 years of age, but the statement on page 389 shows that the excess is not confined to that period, and that it is almost equally striking at other times of life. Of the 16 periods given in the statement there are only three in which the male mortality exceeds the female mortality. In the period from 10 to 14 years of age, for example, the male mortality is entered as 6·02 while the female mortality is 14·71 or more than double. As we said in last year's memorandum, further inquiry on the excessive mortality among females is much required.

5. *Deaths according to Place of Birth.*—Attention is drawn in the Report to the large number of deaths in persons who had been born elsewhere than in Bombay. It was in fact among them that the increased death-rate of 1892 chiefly occurred. The large number of deaths which occur among persons born elsewhere is an annually recurring incident to a greater or less degree in the Bombay statistics; but in 1892 it was more marked than usual, and that too chiefly in the earlier months of the year. The cause it may be assumed was the fact that owing to hard times many persons were driven to the city, and that many of these again were suffering from the effects of privation. The statistics regarding strangers would be much more valuable if some idea were given of the length of time these strangers had been resident in Bombay before they died.

Periods of,—Under 1 month,
Above 1 and under 3 months,
Above 3 and under 6 months,
Above 6 months and under 1 year,

and above 1 year, would be ample to show how far the deaths ought in all probability to be ascribed to causes which had been at work before they came to Bombay.

6. *Deaths according to Causes.*—Arranged under the general headings which are followed in the Provincial Sanitary Reports the deaths for 1892 stand thus per 1,000 of population :—

Cholera	21
Small-pox	66
Fevers	10·29
Dysentery and Diarrhoea	2·22
Injuries	48
All other causes	18·40
Total	32·26

If we turn to page 40 of the General Report, where more detailed comparison is made of the deaths of 1892 with those of the four previous years, we find the mortality under small-pox, measles, fevers, phthisis, respiratory diseases, and diarrhoea was higher than in any of these years.

7. *Small-pox and Vaccination.*—Other diseases do not call for special remark, but in regard to small-pox we may observe that the results are by no means so satisfactory as they are in the town of Madras. There, according to the Report of the Sanitary Commissioner of that Presidency, the small-pox mortality since 1884 has never exceeded 2 per 1,000, and has frequently been much under that. The actual annual number of deaths caused by small-pox in Madras during that period has ranged between 1 in 1886 and 72 in 1890, but in Bombay during the last five years the minimum has been 150 in 1890 and 541 in 1892. The contrast is very unfavourable to Bombay. The only information regarding vaccination in Bombay during 1892 is contained in a tabular statement at page 398 from which it appears that 16,056 infants under one year were successfully operated on during 1892, the total number of births registered during the year having been only 15,485, so that the births of the city were fully overtaken. Under deaths at different ages (page 468) we observe that 78 of the deaths from small-pox occurred among infants under one year, which is by no means satisfactory. On page 397 again we have small-pox deaths according to locality, and observe that in one of the sections the rate was 2·22 per 1,000, the equivalent of 64 fatal cases. More information regarding vaccination would be useful, and its relation to small-pox mortality in the different sections of the city.

8. *Deaths according to Locality.*—The variations in the sectional death-rates which compose the general average of 32·26 for the city as a whole are certainly very remarkable. They range between 2·66 in the Water Division and 47·59 in Parel. It is to be assumed that the inhabitants of the water division go elsewhere to die for there seems no other way of explaining the annually recurring low mortality in this section. In Parel and other parts where a high-death rate is recorded, the Health Officer calls attention to insanitary conditions of bad drainage and sewerage already referred to. How real is the want of drainage in parts is strikingly illustrated by the experiences of a member of the Corporation who come to live in Kamathipura, where the mortality was 46·15, and saw to his amazement the water rising up through the floor of his house.

9. *Sanitary Works*.—There can be little doubt that the description of the Health Officer represent a very serious state of things and there seems to be no reason for thinking that this description is in any way exaggerated. What steps were being taken to remedy the evils complained of? Under the head of drainage two suggestions were made. The first was, that more powerful engines should be provided at Love Grove to pump up the sewage which had been so largely increased in volume by the opening of the Tansa waterworks. This has been acted on. The other was that in order to prevent the saturation of the soil which was taking place, the amount of water delivered in those districts which had insufficient drainage should be reduced to one-third of that which had of late been allowed, and that in those districts where there were no drains at all the amount should be still further curtailed. It does not appear what action, if any, was taken on this last suggestion. The Corporation had agreed to provide an engine for flushing the gullies in the most crowded parts of the city. More latrines and urinals had been erected, and a committee was considering the best kind of fittings for house connections before any further work was done in this direction. Under the head of drainage, in addition to other improvements of a minor kind, it is noted that Rs. 7,09,608 had been sanctioned for the sewerage of Colaba on the Shone system, and that the project was being proceeded with. The water supply was superabundant; with a heavy rainfall the lakes all overflowed and a large surplus ran to waste.

19th July 1894.

OPIUM COMMISSION.

FIRST REPORT

OF THE

ROYAL COMMISSION ON OPIUM;

WITH

MINUTES OF EVIDENCE AND APPENDICES.

Presented to both Houses of Parliament by Command of Her Majesty.



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CONTENTS.

ROYAL COMMISSION. - - - - Page v FIRST REPORT - - - - - vii FIRST DAY'S EVIDENCE :— Sir Joseph Pease, Bart. - - - 1-13 Rev. James Legge - - - 13-17 Dr. Maxwell - - - 17-23 SECOND DAY'S EVIDENCE :— Rev. J. S. Adams - - - 23-29 Rev. Hudson Taylor - - - 29-33 Rev. Christopher Fenn - - - 33-34 Rev. George Piercy - - - 35-36 Mr. Joseph Alexander - - - 36-38 THIRD DAY'S EVIDENCE :— Mr. Benjamin Broomhall - - - 38-44 Mr. George Graham Brown - - - 44-46 Rev. A. Elwin - - - 46-48 Mr. Marcus Wood - - - 48-50 Rev. Frederick Brown - - - 50-52 Brigade Surgeon R. Pringle, M.D. - - - 52-56 Rev. W. S. Swanson, D.D. - - - 56-57 Mr. D. Matheson - - - 57-59 Dr. William Gauld - - - 59-61 FOURTH DAY'S EVIDENCE :— Sir John Strachey, G.C.S.I. - - - 61-70 Surgeon-General Sir William Moore, K.C.I.E. - - - 71-74	Page Dr. F. J. Mouat - - - 75-77 Sir George Birdwood, K.C.I.E., C.S.I. - 77-80 Mr. H. N. Lay, C.B. - - - 81-86 FIFTH DAY'S EVIDENCE :— Sir Thomas Wade, G.C.M.G., K.C.B. - 86-99 Mr. Stewart Lockhart - - - 99-102 Dr. F. Irvine Rowell, M.D., C.M.G. - 102-103 Mr. Alexander Langman - - - 103-104 Sir Lepel Griffin, K.C.S.I. - - - 105-109 Mr. Henry Lazarus - - - 109-110 SIXTH DAY'S EVIDENCE :— Papers read from— Sir Joseph Fayrer, K.C.S.I. - 110-111 Sir Hugh Low, K.C.M.G. - - - 111 Messrs. Bush Brothers - - - 112 Mr. T. W. Duff - - - 112 Evidence of— Mr. William Lockhart, F.R.C.S. - 112-116 Dr. George Dods - - - 116-117 Mr. David McLaren, with tables - 117-123 Rev. T. G. Selby - - - 123-124 Deputy Surgeon-General Partridge - 124-128 Mr. Polhill Turner and Mr. Thomas Hutton - - - 128-130 Mr. Alexander Michie - - - 131-132
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APPENDICES.

Page I. Mr. George Batten's paper read before the Society of Arts on the 24th March 1891 - - - - - 133 II. Historical note on "Opium and the Poppy in China," by Dr. Edkins; Shanghai, 1889 - - - - - 146 III. Memorial from the Anti-Opium Society to the Earl of Kimberley, dated Novem- ber 1892 - - - - - 162 IV. Correspondence with the Foreign Office regarding Sir James Fergusson's state-	Page ment in behalf of the Government in the House of Commons on the 10th April 1891, and the effect of existing Treaties regarding the importation of opium into China - - - - - 165 V. Extracts from an Australian Parliamentary paper concerning the effect of opium on consumers in Victoria, submitted by Sir George Birdwood - - - - - 167 VI. Memorandum handed in by Sir Thomas Wade, G.C.M.G., C.B., in reply to Question 1286 - - - - - 168
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ANALYSIS OF EVIDENCE - - - - - Page 170

ROYAL COMMISSION ON OPIUM.

VICTORIA, R.I.

VICTORIA, by the Grace of God, of the United Kingdom of Great Britain and Ireland Queen, Defender of the Faith, Empress of India, &c., to—

Our right trusty and well-beloved Thomas, Baron Brassey, Knight Commander of Our Most Honourable Order of the Bath;

Our trusty and well-beloved Sir James Broadwood Lyall, Knight Grand Commander of Our Most Eminent Order of the Indian Empire, Knight Commander of Our Most Exalted Order of the Star of India;

Our trusty and well-beloved Sir Lakshmiswar Singh, Bahadur, Maharajah of Darbhanga, Knight Commander of our Most Eminent Order of the Indian Empire;

Our trusty and well-beloved Sir William Roberts, Knight, Doctor of Medicine;

Our trusty and well-beloved Robert Gray Cornish Mowbray, Esquire, Master of Arts, Representative in Parliament for the Prestwich Division of the County of Lancaster;

Our trusty and well-beloved Arthur Upton Fanshawe, Esquire, Director-General of the Post Office of India;

Our trusty and well-beloved Arthur Pease, Esquire;

Our trusty and well-beloved Haridas Viharidas, Esquire, late Dewan of Junargarh; and

Our trusty and well-beloved Henry Joseph Wilson, Esquire, Representative in Parliament for the Holmfirth Division of the West Riding of the County of York; Greeting!

Whereas an humble Address has been presented unto Us by the Knights, Citizens, Burgesses, and Commissioners of Shires and Burghs in Parliament assembled, praying that We will be graciously pleased to appoint a Royal Commission to report as to—

1. Whether the growth of the poppy and manufacture and sale of Opium in British India should be prohibited except for medical purposes, and whether such prohibition could be extended to the Native States:

2. The nature of the existing arrangements with the Native States in respect of the transit of Opium through British territory, and on what terms, if any, these arrangements could be with justice terminated:

3. The effect on the finances of India of the prohibition of the sale and export of Opium, taking into consideration (a) the amount of compensation payable (b) the cost of the necessary preventive measures; (c) the loss of revenue:

4. Whether any change short of total prohibition should be made in the system at present followed for regulating and restricting the Opium Traffic and for raising a revenue therefrom:

5. The consumption of Opium by the different races and in the different districts in India and the effect of such consumption on the moral and physical condition of the people:

6. The disposition of the people of India in regard to (a) the use of Opium for non-medical purposes; (b) their willingness to bear in whole or in part the cost of prohibitive measures:—

with the prayer of which Address We are graciously pleased to comply:

Now know ye, that We, reposing great trust and confidence in your knowledge and ability, have authorised and appointed, and do by these Presents authorise and appoint, you, the said Thomas, Baron Brassey; Sir James Broadwood Lyall; Sir Lachmeswar Singh; Sir William Roberts; Robert Gray Cornish Mowbray; Arthur Upton Fanshawe Arthur Pease; Haridas Viharidas; and Henry Joseph Wilson; to be Our Commissioners for the purposes of the said inquiry.

And for the better effecting the purposes of this Our Commission, We do by these Presents give and grant unto you, or any five or more of you, full power to call before you such persons as you shall judge likely to afford you any information upon the subject of this Our Commission; and also to call for, have access to, and examine all such books, documents, registers, and records as may afford you the fullest information on the subject; and to inquire of and concerning the premises by all other lawful ways and means whatsoever.

And we do by these Presents authorise and empower you, or any five or more of you, to visit and personally inspect such places whether in Our said United Kingdom or

within Our Indian Dominions as you may deem it expedient so to inspect for the more effectual carrying out of the purposes aforesaid, and to employ such persons as you may think fit to assist you in conducting any inquiry which you may hold.

And We do further by these Presents will and ordain that this Our Commission shall continue in full force and virtue, and that you, Our said Commissioners, or any five or more of you, shall and may from time to time, and at any place or places, proceed in the execution thereof, and of every matter and thing therein contained, although the same be not continued from time to time by adjournment.

And We do further ordain that you, or any five or more of you, have liberty to report your proceedings under this Our Commission from time to time, if you shall judge it expedient so to do.

And Our further will and pleasure is that you do, with as little delay as possible, report to Us, under your hands and seals, or under the hands and seals of any five or more of you, your opinion upon the questions herein submitted for your consideration.

And for the purpose of aiding you in such matters, We hereby appoint Our trusty and well-beloved John Prescott Hewett, Esq., Companion of Our Most Eminent Order of the Indian Empire, Deputy Secretary to Our Government of India in the Home Department, to be Secretary to this Our Commission.

Given at Our Court at St. James's, the second day of September, one thousand eight hundred and ninety-three, in the fifty-seventh year of Our reign.

By Her Majesty's Command.

KIMBERLEY.

ROYAL COMMISSION ON OPIUM.

FIRST REPORT.

TO THE QUEEN'S MOST EXCELLENT MAJESTY.

MAY IT PLEASE YOUR MAJESTY,

WE, the undersigned Commissioners appointed to inquire into matters connected with the growth of the poppy and the manufacture, sale, and consumption of opium, desire humbly to submit to Your Majesty the following Report of the steps which we have taken for the prosecution of our inquiry. Prior to our departure for India, six sittings were held in London and 37 witnesses were examined. On the 16th September we adjourned. On the 18th November we re-assembled at Calcutta, where we have held 20 sittings and examined 102 witnesses. A section of the Commission has recently returned from Burma, where it held seven meetings and examined 37 witnesses. At the commencement of the new year we intend to proceed on a tour through Northern and Central India. Our inquiry has not proceeded far enough to enable us to submit any recommendations upon the matters referred to us, but we think it desirable to present the Minutes of the evidence taken in London.

All which we humbly submit for Your Majesty's gracious consideration.

(Signed) BRASSEY.
J. B. LYALL.
LAKSHMISWAR SINGH OF DARBHANGA.
WM. ROBERTS.
R. G. C. MOWBRAY.
A. U. FANSHAW.
ARTHUR PEASE.
HARIDAS VIHARIDAS.
HENRY J. WILSON.

J. P. HEWETT, Secretary.

Calcutta,

December 30th, 1893.

INDIAN OPIUM COMMISSION.

MINUTES OF EVIDENCE

TAKEN BEFORE

THE ROYAL COMMISSION

APPOINTED TO INQUIRE INTO

“(1.) Whether the growth of the poppy and manufacture and sale of opium in British India should be prohibited except for medical purpose, and whether such prohibition could be extended to the Native States;

“(2.) The nature of the existing arrangements with the Native States in respect of the transit of opium through British territory, and on what terms, if any, these arrangements could be with justice terminated;

“(3.) The effect on the finances of India of the prohibition of the sale and export of opium, taking into consideration (a) the amount of compensation payable, (b) the cost of the necessary preventive measures, (c) the loss of revenue;

“(4.) Whether any change short of total prohibition should be made in the system at present followed for regulating and restricting the opium traffic and for raising a revenue therefrom;

“(5.) The consumption of opium by the different races and in the different districts of India, and the effect of such consumption on the moral and physical condition of the people;

“(6.) The disposition of the people of India in regard to (a) the use of opium for non-medical purposes, (b) their willingness to bear in whole or in part the cost of prohibitive measures.”

At the House of Lords, Westminster, S.W.

FIRST DAY.

Friday, 8th September 1893.

PRESENT :

THE RIGHT HONOURABLE LORD BRASSEY, K.C.B. (CHAIRMAN, PRESIDING).

SIR JAMES B. LYALL, G.C.I.E.
SIR WILLIAM ROBERTS, M.D.
MR. R. G. C. MOWBRAY, M.P.

MR. ARTHUR PEASE.

SIR CHARLES E. BERNARD, K.C.S.I.,
Acting Secretary.

SIR JOSEPH PEASE, M.P., called in and examined.

1. (*Chairman.*) Sir Joseph Pease, I believe you are a member of the House of Commons?—I am.

2. And you are the President of the Society for the Suppression of the Opium Trade?—I have been President of the Society for the Suppression of the Opium Trade since the death of Lord Shaftesbury, in 1886. He was my predecessor. I might say that the present Society for the Suppression of the Opium Trade was one that was re-cast, if I may so say, in 1873, or thereabouts, having in view principally the Chinese portion of the question—not so much the Indian then as the Chinese portion. We desired that China should

be left perfectly free to act with regard to opium and levy such duties on opium as she might choose, and that the Indian opium should be kept out of China as a source of great demoralisation to the Chinese.

3. What description would you like to give us of the Indian portion of the opium trade?—As regards the cultivation of the poppy and the manufacture of opium I do not think that it was ever more clearly laid down than by the then Mr. Cecil Beadon, afterwards Sir Cecil Beadon, in his evidence before the East India Committee of 1871 which sat one or two years after that if I recollect right. He is asked, “In what mode is the

Sir J.
Pease, M.P.
8 Sept. 1893.

Sir J.
Pease, M.P.
8 Sept. 1893.

"land then selected for cultivation?"—"When any ryot wishes to cultivate opium, he goes to the sub-agent and asks to have his name registered, his land measured, and to get a cultivation license and the usual advance. The sub-agent makes inquiries, ascertains that the man is really *bonâ fide* an owner of the land which he proposes to cultivate with opium, has the land measured, and then makes an advance upon the security of the person himself to whom the advance is made and his fellow-villagers. The advance is made shortly before the sowing season. The ryot then sows his land, and when the plant is above ground the land is then measured by one of the native establishments, and if the ryot has sown all that he engaged to sow, he gets a second advance; if he has not sown so much he gets something less in proportion; or if more, he gets a little more. There is a sort of rough settlement at the second advance. Nothing further takes place till the crop is ripe for gathering, and when the ryot has gathered the crop he collects it in vessels and takes it to the sub-agent's office, there he delivers it to the sub-agent as the agent of the Government and receives the full price for it, subject to further adjustment when the opium has been weighed and tested and examined at the agent's factory. The opium is then collected at the sub-agency and forwarded to the factory; there it is exposed for a considerable time in large masonry tanks, it is reduced to a uniform consistency, and made fit for the market, some for home consumption, and some for sale in Calcutta for exportation—the greater quantity for exportation. It is there packed in cases and sent to Calcutta, and in Calcutta it is sold by auction at periodical sales and exported by merchants for consumption abroad."—"Is there any regulation by which the Government limit the extension of land so cultivated, or do they always accede to every request?"—"It is limited according to the financial needs of the Government; it is limited entirely upon Imperial considerations. The Government of India, theoretically at least, if not practically, decide how much opium they will bring to market, and, of course, upon that depends the quantity of land that they will put under cultivation and make advances for."—"Are great precautions taken to prevent any person cultivating the land with opium without a license?"—"It is absolutely prohibited." Now, my Lord, that being the state of things you will see that Sir Cecil Beadon distinctly states that it is limited according to the financial needs of the Government. And that is corroborated by extracts which I made some time ago from different messages from different local governors in India. On the 22nd April 1869, the Hon. W. Grey, Lieutenant Governor of Bengal, writing from Barrackpore to Mr. C. H. Campbell, said: "I have a telegraphic message from Simla, urging that every possible expedient that you can approve should be used even now to extend the opium cultivation next season to the greatest possible extent." Sir Richard Temple, in a minute dated 27th April, 1869, wrote: "I am clear for extending the cultivation and for insuring a plentiful supply. If we do not do this the Chinese will do it for themselves. They had better have our good opium than their own indifferent opium. There is really no moral objection to our conduct in this respect." Mr. Grey, again, on the 29th April 1869, urged increased cultivation, remarking: "This would just suffice, and no more, to put us on smooth ground again." Sir John (then the Hon. J.) Strachey wrote from Simla on the 20th April 1869: "It seems to me that immediate measures of the most energetic character ought to be taken with the object of increasing the production of opium." I think that that entirely bears out Sir Cecil Beadon's view that the opium is cultivated for the purposes of revenue only, and without any other considerations than those Imperial considerations. Then I find in the financial statement for 1884-85: "The Government is indebted to Mr. H. Rivett Carnac, opium agent at Benares, for strengthening its opium revenue during the year 1883, and in a lesser degree in the previous year, by the manufacture and preparation of Malwa opium into a form suited for local consumption. It is calculated, so long as the cost of the Malwa drug at 90 degrees consistence does not exceed Rs. 413 per maund, and the selling price of provision opium is not less than Rs. 1,202 for Patna, and Rs. 1,142 for Benares opium, the scheme for substituting Malwa for Bengal opium for manufacture into excise opium is, financially speaking, likely to prove successful." Therefore, the Indian Government

were not only taking care that their own opium was made fit for what is called their local consumption, but it also went further, to buy the Malwa opium to manufacture into a form which is suited for local consumption. I also found from a friend of mine, who wrote a letter which afterwards appeared in some of the papers, that the Government-manufactured opium is advertised in the carriages of the State railways. He says: "In travelling by the mail train on the State railway between Bombay and Ahmedabad, for the whole distance of 300 miles a curious advertisement confronts the passenger. It is in three languages, English, Marathi, and Gujarathi, and informs him that at Ahmedabad he can obtain 10 tolas of opium at the licensed shop, just outside the station." The Indian Government had not only that mode of pressing the sale of opium, but they had also, until the other day, when, on the instigation of Lord Cross, it was repealed, or nearly repealed, a curious clause in what is called the "Bombay License:" "That if the aggregate of the quantities of opium sold by him by retail at his shops as shown in the monthly statements rendered in accordance with the last preceding clause fall short, at any time during the term of this license, of a quantity equal to" [one twelfth, one twenty-fourth, or one thirty-sixth if the license is for one, two, or three years, and so on] "of the minimum number of pounds specified in clause I. multiplied by the number of completed months elapsed from the date of the commencement of this license, he will pay to the collector within seven days after the end of the month up to which any such deficiency may have accrued, penalty at the rate specified in clause I. on every pound of such deficiency; provided that the amount of penalty so paid will be remitted afterwards by the extent to which the deficiency may be made good by larger sales than" (that is the quantity by the license) "of the number of pounds specified in clause I. in any subsequent month or months during the term of this license." That clause the Indian Government have, I believe, abandoned at the instigation of a minute sent out by Lord Cross.

4. You are putting these matters before us, I suppose, to support your contention that there is a more direct moral responsibility lying upon the Indian Government, which is directly concerned in the manufacture and sale of opium, than there would be if the Government confined itself to the imposition of licenses and drawing a revenue from export duties?—What I want to show is that there never was in the civilised world such a curious case as this opium trade of the Indian Government. I have shown by Sir Cecil Beadon's evidence what it is; that it is from first to last a unique trade, whether it is a drug or whether it is something which is quite harmless or beneficial, and it is carried on as a cultivation, as a manufacture by the State; that the State tried by every possible means to obtain fresh and large sales for the drug. I do not think that in the wide world there is such a curious case of a State, or anything like a civilised State such as ours, manufacturing any article, much more manufacturing and dealing in a drug of this character.

5. You draw a distinction between a State's being directly concerned in the manufacture and the position which a State would occupy which simply levied licenses or imposed an export duty, and which, so far as its intervention in the trade is concerned, operated rather to check the trade than to encourage it?—I think there is a very great deal of difference between the two, but I cannot say that I am prepared to recommend that the Indian Government should merely be a licenser of the cultivation and manufacture. I think there is still another and a wider difference between a State saying: "Here is a deadly and a poisonous drug which ought only to be used under professional care," and granting licenses for that, and a State promoting in every possible way the sale, unchecked by medical influence and medical care, of that which I believe to be a drug, which ought only to be dispensed under medical supervision.

6. I believe your society has always considered that the opium trade has been an immoral trade, has it not?—We have always considered it to be an immoral trade; that is the ground on which we have agitated against it. I own that it is a somewhat difficult point to argue what is moral and what is immoral; and therefore I put down on my notes here the manner in which I should best define the reason why we think that the opium trade does not come up to the moral standard. The Anti-Opium Society always considered

it an immoral trade, that is, one that is carried on to the detriment of the human race. Without going into the question of what the Christian law would require, the moral law, which is after all, based upon Christian law, indicates that no man should carry on, and no State ought to carry on, a trade which is detrimental to their fellow men, whether belonging to their own or to a neighbouring State. I went to the Imperial Dictionary to find what was the meaning of the word "moral," there, and it was thus defined: "Relating to the manners, practice, or conduct of men as social beings in relation to each other, and with reference to right or wrong." "The word 'moral' is applicable to actions which are good or evil, virtuous or vicious, and has reference to the law of God as the standard by which their character has to be determined." We say that the opium trade has a preponderance in it of evil over good, of vice over virtue, and that it does not come up to the standard on which communications between men, and especially Christian nations, should be based.

7. You have explained to us your opinion of the opium trade, regarding it from the moral point of view?—Yes.

8-9. And considering it with reference to these principles, then, you wish to show us that in your view the trade has been and is carried on to the detriment of people in India, and especially to those who use the drug in China?—I want, my Lord, to show that it is a drug. First of all we say it is a drug, and it is treated by our law as such. By the 31st and 32nd Victoria, 1868, chapter 121, which is an Act dealing with poisons, the seller of opium in England must be a registered chemist; if he dies, his death has to be reported. All articles in schedule A are poisons; opium and all preparations of opium are in schedule A. Bottles, boxes, phials, wrappers, or covers, must be labelled with "opium, poison" upon them, with the address of the seller. In India it is a curious fact that the Indian drug, with very rare exceptions, has never been cultivated as a medicine, and I think Dr. Watts, in his article on the subject, states it, but that evidence will be put in before you. The supply of medical opium for this country comes, not from India, not from our own colonies, but from Persia and from Turkey. The Indian drug is excluded as not up to the standard in our pharmacopoeia, so I am informed, but that you will get at first hand. It is a fact which no one can deny that whilst some races in India can take it to a moderate extent with apparent impunity, they are the stronger and the better fed races; but the greatest quantity of Indian opium that we make goes to China and is used merely for debauchery, and therefore we say that the Indian opium trade, not being a medical trade, is an immoral trade. It is admitted by all Indian authorities that the Indian opium is not grown for medical purposes, and the great bulk of it goes to China.

10. The bulk of the consumption of the Indian-grown opium is not in India?—It is not in India; it is in China.

11. Have you any observations to make on the opium trade with China?—It is often argued that if we were not to supply China with opium, China would supply herself with opium. That is an argument which is very well met in Dymond's "Essays on Morality." I have no right to do that which is wrong, if it is wrong, because somebody else is going to do wrong. Dymond puts it:—"If I were to sell a man arsenic or a pistol knowing that the buyer wanted to commit murder, should I not be a bad man? If I let a house knowing that the renter wanted it for the purposes of wickedness, am I an innocent man?" The argument that if I did not do it someone else would, Dymond treats as follows:—"Upon such reasoning you might rob a traveller on the road if you knew that at the next turning a footpad was waiting to plunder him. To sell property or goods for bad purposes because if you do not do it someone else will, is like a man selling his slaves because he thought it criminal to keep them in bondage." I wanted to bring that out that it might be on your notes, because it is an argument that is so often used in favour of the Indian opium trade, and I think has no defence in solid international morality.

12. Do you contend that the home growth—the growth of opium in China—has been stimulated by British influence?—I have not the slightest doubt in my own mind, but it is a very difficult matter to prove.

13. That is a contention of yours?—We contend certainly that if the Indian opium had been kept out of China the home growth would have lacked a

stimulus which it has had. It is perfectly natural for the Chinese, so long as Indian opium is going in upon them, to grow the drug in order to keep their dollars at home instead of going to India for opium.

14. I was asking you for the statistics of the trade?—The Indian opium sales for export were in 1880-81, 56,400 chests for China; 1889-90, 57,000; 1891-92, 54,000; and the excise chests, I have not got the last year, run about 4,000, 5,000, and 6,000 chests a year.

15. So that by far the greater proportion of the whole quantity of opium produced in India goes to China?—By far. I have here a table, sometimes you get these tables in chests, sometimes in cases, and sometimes in cwt.s., and, like many other statistics, which I daresay other members of this Commission have followed, you do not find Government statistics the most easy to follow, in the constantly varying denominators. But here are the statistics of opium exported from British India for several years, from 1880-81, in cwt.s. In 1880-81 it is 113,125 cwt.s.; in 1881-82, 108,102 cwt.s.; in 1882-83, 110,512 cwt.s.; in 1883-84, 114,514 cwt.s.; in 1884-85, 102,195 cwt.s.; in 1885-86, 103,638 cwt.s.; in 1886-87, 112,987; in 1887-88, 106,398 cwt.s.; in 1889-89, 100,320 cwt.s. It does not vary greatly. It has rather fallen down lately. In 1889-90 the figures are 96,490 cwt.s., and in 1890-91, 97,863 cwt.s., as compared with 113,125 in 1880-81. The Straits Settlements seem to have increased from 14,113 cwt.s. in 1880-81 to 20,328 cwt.s. in 1890-91. The rest is comparatively small. Those are the large portions of the trade going to those places.

16. Now, looking at these statistics which you have given us, might I correctly take it from you that your Association is even more concerned to check or to stop the export trade to China than either to diminish or prohibit the consumption in India?—We consider that by far the most important part of the subject. At the same time I think the evident tendency in India was to increase the local consumption, it is not a very great one, but there was evidently a tendency to increase the local consumption in India; and I think I shall prove that there is a very large increased tendency on the part of the Government officers to acknowledge the evil and to keep down as much as possible the local sale.

17. And as far as you have had the opportunity of tracing the course of conduct of the officers of the Government in India you are not prepared to say that there is any disposition on their part to give encouragement to the increased consumption of opium in India?—I propose, my Lord, if I have time, to touch on that; I think I can show from Lord Cross's Blue-book that there is a very large amount of care now being exercised, which I do not think was previously exercised, on the part of the Government officers in India, in diminishing it, and I look upon that as one of the greatest proofs possible that there is a moral evil connected with an extended sale.

18. I was going to ask you if you were prepared to give us some figures showing the revenue obtained by the Indian Government from the export trade?—The highest opium revenue was in 1880-1; it amounted to 8,451,276 Rx. That was divided into the Bengal duty, 5,926,924 Rx.; the Malwa opium duty, which is a Pass Duty on opium manufactured in the native states formed 2,524,458 Rx. Then the Budget Estimate for 1892-3 was altogether 5,399,800 Rx., of which about 1,800,000 in round figures came from the Pass Duty; therefore that shows a falling off of 3,000,000 Rx. between the year 1880-1, and the Budget Estimate for 1892-3.

19. Is that all you wish to give us with reference to revenue?—Yes, so far as this portion of the subject is concerned. I should like, if opportunity offers, to say a few words on the Indian Revenue generally; but that, I would rather take later.

20. I understand that you wish to proceed to deal briefly with the history of the Chinese opium trade?—In 1834 there was a decree issued by the Emperor of China against opium and its importation. In 1839, we had the first Chinese war. In 1842, there was Sir Henry Pottinger's Treaty of Nankin when we got 21,000,000 dollars from the Chinese, when Sir Henry Pottinger tried to get opium into the treaty, but failed. Then, in 1856, there was a seizure of the *Lorch Arrow*; and on the 3rd of March 1857 a resolution against Dr. Bowring's conduct was carried in the House of Commons by a majority of 19. Then Lord Palmerston appealed to the country, and was reinstated in power. Then came the Treaty of Tientsin, in 1858, when opium was

Sir J.
Pease, M.P.
8 Sept. 1893.

Sir J.
Pease, M.P.
8 Sept. 1893.

admitted into China at 30 taels per chest. I do not want to go into the question whether this was forced on China or not; because I think it is a very immaterial question whether the Chinese wished to have it into the treaty or did not wish to have it into the treaty. It is in the treaty, and has been there ever since. I could go into the question of force, but that is a controverted question, and I do not think that it would add very much to the value of my evidence if I gave my own view on the subject, because it is a history of the past which may be either the one way or the other. But there it is in the treaty.

21. You have been giving us a general sketch of what has happened in the past; it is old history, and you are, I assume, prepared to recognise that it is no longer the policy of this country to use force or pressure to compel the Chinese Government to admit the importation of opium from India?—I am perfectly content with Sir James Fergusson's statement in relation to the treaty of Tientsin, made during the debate on the 10th of April 1891, though I have very great doubts whether Sir James Fergusson was quite right in his interpretation of the treaty. Sir James Fergusson said: "The Chinese at any time may terminate the treaty on giving twelve months' notice, and to protect themselves they may increase the duty to any extent they please, or they may exclude it altogether. This, I think I may say, that if the Chinese Government thought proper to raise the duty to a prohibitive extent, or shut out the article altogether, this country would not expend £1. in powder and shot or lose the life of a soldier, in an attempt to force opium upon the Chinese." Now, my view of it, and I wish rather to put that upon the record, is, that the treaty of Tientsin (I have not read it for several years) can only be recast every ten years. He is quite right if he were speaking of the convention of Chee-foo. I believe 12 months' notice does operate on the convention of Chee-foo. He used the word treaty. However, if that is the policy of the Government we are perfectly content; if the Chinese are to be left at liberty to put on such duty as they like on giving 12 months' notice, then I say that so far as China is concerned she is left free and perfectly independent, and I trust that is the policy of the present Government as well as the policy of the Government that Sir James Fergusson represented.

22. That is undoubtedly, we may take it from you, the national policy at this time?—That is what I understand to be.

23. We leave China perfectly free to deal with the trade as her rulers may think fit?—That is what I understand to be the international policy.

24. You have already said that your interest is very deeply engaged in the suppression of the opium trade with China, and on the ground that you hold it to be an immoral trade?—Yes, and in that view we are corroborated.

25. Perhaps you would give us your position?—We are corroborated I think, first of all, by the state of feeling in this country. We have had memorials and petitions to Parliament from, I think, the assemblies of every Christian Church. We have had them from the two convocations of York and Canterbury, the Wesleyans in Conference assembled, the Free Church Methodists, the Baptists, the Congregationalists, the Presbyterians of England, the Scotch Church, the Free Kirk, the Friends, the Unitarians. Then we have, in addition, the missionaries in China and in India; and I have here a telegraphic message I got from the Bishop of Bombay, on the evening of the 10th of April, 1891, in which he says: "Public meeting at Bombay to-day. Resolved, opium traffic of Indian Government morally indefensible.—Bishop of Bombay, Chairman." In addition to this we had a petition to Parliament signed by the late Cardinal Manning and all the Roman Catholic bishops; and one from the clergy of London; and there was a memorial sent to Mr. Gladstone a year or two ago from the two archbishops, twelve bishops, the archbishop of Dublin and thirty mayors and provosts.

26. Have you got lists of the towns whose mayors made those communications?—No, I have not got a list here, but I can easily supply it, because I have a full copy of them among my papers. Then there were the clergy of London, the Dean of St. Paul's, the Archdeacon of London, Canon Newbolt, Canon Russell, Canon Larry, Archdeacon of Middlesex, Canon Farrar, Edwd. Carr Glynn. I also presented on that date to

the House of Commons an Indian petition with 4,136 signatures. I presented petitions from the Chinese Christians of Hong Kong, the Christian churches of Shanghai and of Canton, and the Pekin Anti-Opium Society; and one from the Straits Settlements, Singapore, had 1100 signatures to it. Then, the other day, there were 1073 Indian missionaries signed the following protest: "We are unalterably opposed to the participation by the Government in the demoralising traffic in opium, and we record our conviction that it is a sin against God and a wrong to humanity." Then the petitions this year to the House of Commons have almost exceeded, I think, those on any other subject unless it be the drink question.

27. Will you give us some of the figures?—In 1891, there were 957 petitions officially signed; 3,353 petition with 192,000 signatures. This year there have been 331 petitions officially signed; 2,563 petitions signed by 213,792 people. Some of those petitions were from towns that seemed to take a very special interest in the subject.

28. Would you give us some of the details?—Blackburn sent a petition of 11,000 signatures; Newcastle, 6,000; Croydon, 4,000; Derby and district, 2,800; Birmingham, 3,000; Liverpool, 2,000; Preston, 1,800; and so forth. Then, may I proceed, my Lord, leaving this part of the subject and that which I may call the case of the Christian churches?

29. Well, we should be glad to hear anything that you have to tell us which indicates the views of our public men on the subject?—I quoted in the House of Commons a very curious despatch from the East India Company to Lord Cornwallis in 1817, and he was one of the first of the Governors of India: "We wish it, at the same time, to be clearly understood that our sanction is given to these measures, not with a view to the revenue which they may yield, but in the hope that they will tend to restrain the use of this pernicious drug, and that the regulations for the internal use of it will be so framed as to prevent its introduction into districts where it is not used, and to limit its consumption in other places as nearly as possible to what may be absolutely necessary. Were it possible to prevent the use of the drug altogether, except for the purposes of medicine, we would gladly do it in compassion to mankind."

30. What is the date of that?—That is as far back as 1817. Then it was my duty to hear Under Secretary after Under Secretary.

31. We shall be very glad to hear what they said, whether speaking in the House of Commons, or elsewhere?—First, I take Lord Salisbury in 1876, when we went to him as a deputation on the question of the Bengal trade, he said that: "The Government does not view with any favour an extension of the system, and there is no project of the kind in existence. Without taking the view as to its moral condemnation which is held by many persons present, I feel that there are inconveniences of principle connected with it"—inconveniences of principle is rather a curious term—"which would have prevented any Government in the present day from introducing it. I entirely disclaim any intention to push the Bengal system farther."

32, 33, 34, 35 and 36. Have you any more similar quotations?—Mr. Bourke said, in replying to our speeches in the House of Commons, he being then Under Secretary of State for India: "The opium question had often been debated in that House, and he never heard anyone say aught in favour of the traffic from a moral point of view." The late Under Secretary of State, Mr. Grant Duff, now Sir Mountstuart Grant Duff, said in the administration of 1868 to 1874. "There was a great deal to be said against this Bengal monopoly on politico-economical grounds. He supposed no one would invent such a system now-a-days; but we did not invent the system; we inherited it from the East India Company, and carried it on in the same way." Mr. Gladstone, in 1879, says: "The opium revenue we may accept with more or less compunction and regret, as ministering to our present necessity, but we have no right to reckon on its full continuance." Then perhaps the strongest of these statements was made by Sir James Fergusson, who at the time was Governor of the Bombay Presidency; Sir James Fergusson wrote, thus:—"The Government consider there are very strong objections to the introduction of an industry so demoralising in its tendency as opium cultivation and manufacture into a

" province where at present it is unknown, and, so far as his Excellency in Council is aware, not asked for by the people. If opium cultivation were allowed in Scinde, it could not with consistency be prohibited in the rest of the Presidency. It has already been tried at Gujarat, and the result was widespread corruption and demoralisation. At present the consumption of opium in this Presidency is very limited, but if the cultivation and manufacture of opium were permitted, every village might have its opium shop, and every cultivator might contract the habit of eating a drug which is said to degrade and demoralise those who become addicted to it. On the ground of public morality, therefore, his Excellency the Governor in Council would strongly deprecate the grant of permission to cultivate the poppy in Scinde, or in any other part of this Presidency." I take the occasion to point out that Sir James Fergusson objected on the grounds of public morality.

37. On the ground that your society takes?—Yes, that we have advocated all along.

38. Have you any more statements of the same kind?—I pass now from that to the House of Commons.

39. Some statements have been made in the House of Commons by the late Mr. W. H. Smith and Sir J. Fergusson?—Yes; and Mr. Smith stated that: "The course which the Government of India had taken during the last five years was to diminish the area of cultivation in India by 20 per cent. That must be taken as an indication of the policy of the Government in its administration of India." A little further on he said: "The policy of the Government had been greatly to diminish the cultivation and consumption of the drug in India. That had been their distinct policy during the past five years, and it would be preserved in the future."

40 and 41. Have you got the statistics showing the reduction in the acreage under the poppy?—The acreage under the poppy was reduced in accordance with these statements. In 1890 and 1891 there were 500,688 acres; and in 1891-92 it had been brought down to 463,665 acres. The chests to be sold were reduced from 57,000 to 54,000. Again, I take that as a proof that the Government desired to discontinue the trade. The highest opium acreage in any year I see on these papers was 594,921; that was in 1885-86. That is the highest I find.

42. By whom were these statistics supplied?—I received them from Mr. Curzon when he was at the India Office.

43. Have you got the statistics there from year to year?—Yes, I have them from 1881.

44. Could you give them to us?—Yes, they are as follow: 1880-81, 536,017 acres; 1881-82, 531,275 acres; 1882-83, 495,740 acres; 1883-84, 505,843 acres; 1884-85, 565,246 acres; 1885-86, 594,921 acres; 1886-87, 562,052 acres; 1887-88, 536,607 acres; 1888-89, 459,864 acres (that is the lowest year I can find); 1889-90, 482,557 acres; 1890-91, 500,688 acres; 1891-92, 463,665 acres.

45. Does that embrace all that you wish to say to us on the point of the acreage?—Yes, and they show that that which Mr. Smith has indicated had practically been carried out. Although in one or two years there are little jumps up, the quantity has been reduced from 594,900 acres in 1885-86 to (in the present year) 463,665 acres, because the Indian Government acted on the view that the trade was one that ought not to be pushed, but ought to be gradually relinquished.

46. We should be glad if you would state shortly the history of the opium question in the House of Commons. In what session was the question of the opium trade first discussed; how many motions have been made on the question, when divisions have been taken, and what were the numbers on both sides?—The resolution which I moved in 1891 (it was on the Friday, on the question of leaving the chair) was this. The question proposed was: "That Mr. Speaker do now leave the chair," and my amendment proposed to leave out after the word "That" to the end of the question, in order to add the words: "this House is of opinion that the system by which the Indian opium revenue is raised is morally indefensible, and would urge upon the Indian Government that it should cease to grant licenses for the cultivation of the poppy and the sale of opium in British India, except to supply the legitimate demand for medical purposes, and

"that they should at the same time take measures to arrest the transit of Malwa opium through British territory." I think I shall prove to the Commission that the House of Commons affirmed the doctrine which is laid down in that motion, that it was morally indefensible. The question was put in the usual form on Fridays, when the motion is, "That Mr. Speaker do now leave the chair," in order, technically, that the House should go into Committee of Supply. To this resolution I moved an amendment in the usual Friday form, to leave out from the word "That" to the end of the question, in order to add the words I have just read. The Speaker put the question that the words proposed to be left out, that is, from "That the Speaker do now leave the chair" stand part of the question. The House divided, Ayes, 130, Noes, 160. (It was really 161). I want to show that the House of Commons virtually passed a resolution by a majority of 30, that the opium revenue was morally indefensible. The words of my motion were then added to the word "That," and the main question, as amended by me, was proposed by Mr. Speaker according to the decision of the House on the division. The question as amended was then in possession of the House, and before it was finally put, my words could have been altered by the consent or vote of the House, but no amendment to those words was proposed. If Sir Robert Fowler had not moved an addition, and no other motion had been made, the question as amended by the majority of the House would have been put, and the majority would no doubt have carried it. But Sir Robert Fowler moved an amendment in the form of an addition, and an addition only. That addition became the property of the House, and could have been amended, it could have been accepted or rejected as proposed or amended; but the original words could not have been touched after the addition had been moved. This was the position of affairs when the Speaker, at one o'clock, adjourned. The only question of uncertainty was not my resolution, but Sir Robert Fowler's amendment. Had time allowed, other additions could have been moved, but not so as to destroy the meaning of the unaltered words. That statement is a correct statement, not altogether my own drawing up.

47. In what year was that?—That was on the 10th April 1891.

48. Was a division taken on that occasion?—A division was taken on that occasion.

49. And what were the relative numbers?—160 to 130 is the chronicle of the division. When you look at the list it is really 129 to 160. We always call it 30 majority, of course.

50. For your motion?—For my motion. Therefore I say that the House of Commons practically condemned the trade in that year as morally indefensible.

51. Have there been any subsequent divisions?—There have been a great many debates, of course, where there have been no divisions. In 1870 the previous question was carried against Sir Wilfred Lawson on an opium motion; 46 voted with him, and 151 against. In 1875, June 26th, going into Committee of Supply, there was a motion moved by Sir Mark Stewart which was rejected, the figures were 57 to 94. The previous question in 1883 was carried against me, 66 to 126. In 1889 Mr. Samuel Smith had a motion which was rejected; 88 voted for and 165 against. With regard to my motion on the 10th April 1891 (the one I have just referred to), 160 voted for it, and 129 against it. Lastly, we had Mr. Gladstone's amendment embracing a Commission, and I beg to call your attention to the fact that this was only a question of which of the two Commissions, and the wording of the appointment of the Commission. There 105 voted with me, and 184 with the Government. But you will see, my Lord, these divisions have gone 46, 57, 66, and 88, and on the great question, the moral question, 160; and the last 105 on the question of the appointment of the Commission.

52. What was the issue between you and the Government with reference to the wording of the Commission?—Well, I am not quite sure that I am at liberty to say exactly, but I can tell you my own point was that in my resolution I wanted that the trade should be declared as morally indefensible, and I refused to take any Commission that did not admit that. The appointment of your Commission has in it the word "whether." "Whether the growth of the poppy and manufacture and sale of opium in British India should be prohibited except for medical purposes, and whether such prohibition could be extended to the Native

Sir J.
Pease, M.P.

8 Sept. 1893.

Sir J.
Pease, M.P.

8 Sept. 1893.

"States." I was quite ready (adding further words), to have voted with the Government if it had been "when the growth," having due regard to the revenue of India, &c. Of course that resolution does not admit, by putting in the word "whether," the moral question, which is the question on which we stand.

53. Have you completed what you wished to say in reference to the position of the question in the House of Commons?—I think I have, my Lord, entirely.

54. You have been in Parliament for many years, and you have gone through many contested elections. Would you tell the Commission that your experience would justify you in saying that constituencies take an interest in this question?—I think they take a very great interest in it. I have attended meetings in Scotland and all through England, down as far as Plymouth. Other gentlemen in this room have attended still more, and I never saw meetings on any subject which were attended by such large numbers of people, and with so much enthusiasm. I was exceedingly struck with the numbers of the people attending, and the character of the people attending and the large platforms that we have had.

55. And do you find local speakers of ability and influence in their respective districts coming forward and speaking upon this question with deep interest and manifesting some close study of the question?—With very great interest. You will have gentlemen before you who, I think, have attended more meetings than even I have, but wherever I have been it has been very remarkable, that a large amount of information and knowledge of the subject has been displayed. Our society is a very small society as far as money is concerned, but we are strong in affiliated societies throughout the country. Each one looks after its own funds. We have comparatively small funds at our disposal.

56. Having completed what you wished to say with reference to the position of the question in the House of Commons, would you like at this stage to give us any evidence of the state of public opinion on this question in other countries?—There are only three other countries, I think, that I have taken the trouble to inquire into. First, in California. I doubt myself, I may say honestly, whether these laws are well carried out, but the Californians have a State Law, section 307: "Every person who opens or maintains, to be resorted to by other persons, any place where opium, or any of its preparations, is sold or given away to be smoked at such place, and any person who, at such place, sells or gives away any opium or its said preparations to be there smoked or otherwise used, and every person who visits or resorts to any such place for the purpose of smoking opium or its said preparations, is guilty of a misdemeanor, and upon conviction thereof shall be punished by a fine not exceeding five hundred dollars, or by imprisonment in the county jail not exceeding six months, or by both such fine and imprisonment." Statutes, California, p. 34, 1881.

57. Are there any other countries which have legislation on this subject?—A Bill has passed through the Lower House of the colony of Victoria by a very large majority, very much like the Californian law, only I think it is much more carefully drawn, so far as I know, than the Californian law as regards dealing in opium.

58. In what session was this submitted to the Victorian Legislature?—It was read the first time on the 13th April 1892.

59. Have you any other countries?—The Dutch have raised an anti-opium agitation against the sale of opium in Java, and there have been meetings at Amsterdam or Rotterdam.

60. Have you anything to tell us with reference to treaties dealing with the prohibition of the importation of opium?—The Chinese treaty with America excludes opium; the Chinese treaty with Russia excludes the importation of opium.

61. What are the dates of those treaties?—I cannot give you the dates of those. They have been for some time in effect. And there is also the treaty of England with the Corea.

62. That is recent, I suppose?—That is more recent; it prohibits the introduction of opium.

63. In your position I suppose you have heard a great deal from the medical missionaries and from others giving you their impression with reference to the

effect of the use of opium—perhaps you would give us something upon that?—I have got an enormous amount of evidence with regard to China.

64. Would you make your own selection of the most important?—There is so much of it that I am almost afraid I should not know where to stop; but I will first read from the papers called "The agreement between the Ministers Plenipotentiary of the Governments of Great Britain and China contracted at Che-foo, September 13th, 1876." Sir Thomas Wade says: "The evil of opium smoking in China I do not contest. I do not abate it by a parallel between it and the abuse of spirits even amongst hard-drinking nations. The smoker to whom his pipe has become a periodical requirement is more or less on a par with the dram-drinker; but the Chinese constitution, moral or physical, appears to me to be more insidiously invaded in the case of the first. The confirmed smoker is not, or is seldom, at all events, outwardly committed, like the drunkard, to indecorum. The indulgence appears, at the same time, to present a special attraction to the Chinese as compared with other peoples. The use of it, in my experience, has become more general in the class above that in earlier times addicted to it."

64A. Have you any evidence from missionaries?—A petition from missionaries and ministers of the gospel in China was presented by my brother on the 6th April 1883, at the time he was in the House. That petition says: "That opium is a great evil to China, and that the harmful effects of its use cannot be easily overstated. It enslaves its victim, squanders his substance, destroys his health, weakens his mental powers, lessens his self-esteem, deadens his conscience, unfits him for his duties, and leads to his steady descent, morally, socially, and physically." Then the petitioners go on to "pray that your honourable House will early consider this question with the utmost care, take measures to remove from the British treaty with China the clause legalizing the opium trade, and restrict the growth of the poppy in India within the narrowest possible limits."

65. Do any of your authorities make comparison between the effects of opium and alcohol? That is an argument I myself never cared much to go into, because, if drink is bad it does not follow that opium is better, or if opium is bad, that drink is better. M. Carne, in the *Revue des Deux Mondes*, 1870, writes: "I do not believe that there ever has been a more terrible scourge in the world than opium. The alcohol employed by Europeans to destroy savages—the plague that ravages a country—cannot be compared to opium." That writer was M. Carne, a French traveller, in an article in the *Revue des Deux Mondes*. The Reverend E. H. Graves, M.D., 13 years medical missionary at Canton, writes in the "Friend of China":—"The habit of opium smoking is more dangerous than that of taking alcohol, on account of the insidiousness of its approach, and the difficulty of escaping from its clutches. This vampire seems to suck all the moral courage out of a man. As to deeds of violence, opium must yield the palm to alcohol."

66. At what date?—In 1870, I think it was. Then Sir George Staunton, who was the representative of the East India Company at Canton, said many years ago: "It is mere trifling to place the abuse of opium on the same level with the abuse of spirituous liquors. It is (i.e., the abuse) the main purpose in the former case; but in the latter it is only the exception." Then Dr. Dudgeon, surgeon to the Peking Hospital, said in a paper printed in the transactions of the Social Science Association, Liverpool meeting, 1876, page 596: "Speaking generally, it may be asserted that it is next to impossible to give up the habit when once it is formed. A very large number of criminals die in China from deprivation of the drug while in prison. The well-nigh impossibility of renouncing the habit is to be taken into account when considering the question, of the possible moderate use of the drug. We cannot get over the entrancing power of the drug, the supreme difficulty of renouncing it, the necessity of increasing the dose, the almost inevitable death that follows its sudden deprivation, and the steady descent, moral and physical, of the smoker. With spirits the harm may be said to be the exception, but with opium it is the rule. Many drink, but few abuse; many smoke opium, but all abuse. With the opium-smoker there is no intermission or fits as

"in the case of the drunkard; the victim must have his regular allowance."

Then Sir Thomas Wade in a much earlier quotation than that which I made just now from him writes in a memorandum of 1858: "It is to me vain to think otherwise of the use of the drug in China than as a habit many times more pernicious, nationally speaking, than the gin and whiskey drinking which we deplore at home. It takes possession more insidiously, and keeps its hold to the full as tenaciously. I know no case of radical cure. It has insured in every case within my knowledge the steady descent, moral and physical, of the smoker, and it is so far a greater mischief than drink that it does not, by external evidence of its effects, expose its victim to the loss of repute which is the penalty of habitual drunkenness. There is reason to fear that a higher class than used to smoke in Commissioner Lin's day are now taking to the practice."

67. and 68. You have given us no very recent opinions?—We have an Indian authority, Dr. Huntley, in 1892 or 1893: "Alcohol has not been dragged into the opium question by anti-opium agitators. The agitation in this phase of the question was started by the pro-opium agitators. The comparison has been made, and will be made, and in justice to alcohol, the opium eater or smoker in the East should not be confronted with the alcohol drinker of the West. It is somewhat surprising to read such a statement as that of Dr. Lawrie: 'Alcohol destroys the health and leads to crime. Opium does neither the one nor the other.' The *Lancet* on this subject says: 'The position of the two agents is by no means identical. Alcohol doubtless is, in its pure state, a poison.'"

69. Is that all you wish to say with reference to that?—No; I have a great deal more that perhaps I would like to take.

70. We do not wish to restrict your statement?—I am only afraid of taking up your time, my Lord. This is 1832. The Rev. W. H. Collins, M.R.C.S., formerly Medical Missionary at Peking: "After fully 20 years' (furloughs deducted) experience of opium smoking in China, I solemnly affirm that it is a most deleterious practice; far more so than either spirit drinking or tobacco smoking. The man who smokes opium becomes enfeebled both in body and mind. The wealthy man may continue the practice for many years, being able to vary his diet and to increase the dose of opium; but the poor man loses both his appetite and the means of procuring food at the same time, and quickly becomes a total wreck. When a man has been enabled, by the aid of medicine, to break off the habit, he nearly always yields to temptation, and resumes the habit. Self-interest never enables such a man to abstain from smoking, but he will resume the pipe, knowing well that the result must be the starvation of his family, and his own miserable end. I have only seen three or four cases of permanent cure out of many hundreds that I have treated." Then in 1892, Miss Geraldine Guinness in "Four Years' Sojourn in China": "had travelled through six of its provinces, and was also personally acquainted with the opium question in Tonquin, the Straits Settlements, Colombo, and Aden. She gave a graphic account of some of her opium experience in China. She spoke of how her heart had ached and bled during the painful hours in which she had worked by the bedside of women and girls who had poisoned themselves by opium to save themselves from fates worse than death, to which they had been sold because their fathers and husbands wanted opium. The opium vice is not one crime simply, but a concentration of all crimes. She spoke of the great opium palaces of lust in Shanghai that she had visited, where hundreds of women were held in bitter bondage. Crime of the blackest dye is directly traceable to opium in China." There are only two more, my Lord. I have a great number, but I think those two will do. I have picked them rather promiscuously than with any special design at the present moment. This is Archdeacon Wolfe in 1888:—"The devil could not have invented a more pernicious vice for the destruction of soul and body than this of opium smoking, and was to the man who by word or deed gives any support or encouragement to the hell-born traffic! It is necessary for every friend of the Chinese to speak out in the plainest and most decisive

manner on the evils of opium smoking. The people are being ruined by it, and it is indeed a lamentable spectacle to see professing Christian men speaking and writing in defence of this horrible crime. The pernicious results of this soul and body destroying vice are apparent all around, cadaverous looking faces meet one on every side, and the slovenly habits and the filthy appearance of the people generally testify too plainly to the evil it is working on this once-industrious and energetic population. The rapid progress which opium smoking has made during the last 20 years among all classes of this population is a very serious matter for us missionaries. Humanly speaking, opium smokers are beyond the reach of conversion, as the vice unfits them for the perception of any moral or spiritual truths. Can the Church of Christ in England do nothing to influence the nation to withdraw from the abominable traffic which is causing so much moral, spiritual, physical ruin to this great people? It is a sad reflection on the Church of Christ in England that it seems powerless to influence the English people in so important a matter as the Indian traffic in opium. Men openly and without shame prostitute their wives, in order to procure for themselves the means of indulging in opium smoking. Little children are sold as slaves and turned away from the embrace of their helpless mothers in order that their degraded fathers may have money to buy opium. All this and much more may be told of the effects of opium smoking on the miserable people; yet professing Christians in England see no harm in it, and openly advocate the abominable traffic which makes it possible and comparatively easy for the Chinese people to ruin themselves and their wives and children for time and for eternity!" The next is a letter I received from Mr. David Hill. Mr. David Hill is the son of an old Yorkshire gentleman, and went out as a missionary to China, and I have had several conversations with him on subsequent dates to this letter, but this is one he wrote to me.

71. On what date?—1881. He says: "The effects of opium smoking upon the Chinese generally have again and again been depicted to the British public in strong and earnest language, but never I think too strong, and certainly never too earnest. No language can fully picture to others the deplorable consequences of opium smoking which I have myself seen in China even in the case of some of my own Chinese acquaintances." Mr. Hill is a man after whom anyone can speak.

72. I presume your Association is in touch with a large body of missionaries in the East?—You will have several of them before you, and I believe that our Association is in constant communication with them.

73. And would you undertake to say that so far as your knowledge extends the opinion of the missionaries is a unanimous opinion on the subject?—I will not say it is unanimous, but almost unanimous. There are some, especially among the Indian missionaries, who do not take quite so strong a view as some of those that I have read.

74. Would you say of the missionaries in China that their opinion is unanimous on the subject, or nearly so?—We do not know of any exception among the Chinese missionaries.

75. But is it the case in India that the unanimity is less pronounced?—Might I give you, my Lord, an American one, the Rev. Howard Malcolm: "No person can describe the horrors of the opium trade. That the Government of British India should be the prime abettor of this abominable traffic is one of the wonders of the nineteenth century." (I cannot give you the date of this.) "The proud escutcheon of the nation which declares against the slave trade is thus made to bear a blot broader and darker than any other in the Christian world."

76. Does that complete what you wish to give us as a fair general representation of the medical and missionary opinion?—I think I should be trespassing almost unduly upon you if I went on.

77. No, we are quite prepared to hear from you the full case?—I believe you will have as a witness Dr. Maxwell who has seen a great deal, and I hand him over my other extracts if he chooses to make use of them. May I say that I have one or two more proofs with regard to India and the effects of opium. One of the most striking papers that ever was written I think is: "The Consumption of Opium in British

Sir J.
Pease, M.P.
8 Sept. 1893

Sir J.
Pease, M.P.

8 Sept. 1893.

Burmah," a copy of a memorandum by C. U. Aitchison (now Sir Charles Aitchison), written in 1880 on the consumption of opium in British Burmah, and there he describes in extraordinarily strong language, but language which has been corroborated since by subsequent testimony, the effect of the introduction of opium into British Burmah by the Indian Government. He says: "It is no debateable question of the effect of opium on the human frame that is here raised. Under some conditions the moderate use of opium may be beneficial. The Chinese population in British Burma, and to some extent also the immigrants from India, especially Chittagonians and Bengalees, habitually consume opium without any apparent bad effects; those of them who have acquired the habit do not regularly indulge to excess. With the Burmese and other indigenous races the case is different. The Burmese seem quite incapable of using the drug in moderation. A Burman who takes to opium smokes habitually to excess. The habit once acquired can rarely, if ever, be broken off, and this infirmity of temperament is pandered to by the dealers in opium, who tempt young and respectable men to their ruin by giving them opium for nothing, well knowing that the taste once acquired will be habitually indulged. The papers now submitted for consideration present a painful picture of the demoralisation, misery, and ruin produced amongst the Burmese by opium smoking. Responsible officers in all divisions and districts of the province and natives everywhere bear testimony to it. To facilitate examination of the evidence on this point, I have thrown some extracts from the reports into an appendix to this memorandum. These show that, among the Burmans, the habitual use of the drug saps the physical and mental energies, destroys the nerves, emaciates the body, predisposes to disease, induces indolent and filthy habits of life, destroys self respect, is one of the most fertile sources of misery, destitution, and crime, fills the jails with men of relaxed frame predisposed to dysentery and cholera, prevents the due extension of cultivation and the development of the land revenue, checks the natural growth of the population, and enfeebles the constitution of succeeding generations." As the Commissioners I dare say are already aware, the Indian Government in Burmah has at length taken steps to extinguish the curse of opium in that country. And they say that because, "the use of opium is condemned by the Buddhist religion" (they do not say anything about the laws of morality or the Christian religion) "the Government, believing the condemnation to be right, intends that the use of opium by persons of Burmese race shall for ever cease." That is being carried out in Burmah, making exception of the Chinese and the Indians, who had according to the first issue, and I hope still have, to register themselves as smokers and continue to register themselves as smokers of opium in order that it may be kept from the Burmese. I dare say this copy of Sir Charles Aitchison's papers and the reports of the other officers in Burmah, which corroborate that very strong clause which I have just read, are or will be among the papers which you have or will have laid before you.

78. Does that complete what you have to say?—I should like to say one or two words more.

79. We are ready to hear you on the medical aspect of the case?—There is a very striking illustration that I am going to read from Lord Shaftesbury's speech in 1843 when he brought a motion before the House on the subject.

80. The House of Commons?—Yes. He said: "I will request to this the serious attention of the House. The writer says: 'However valuable opium may be—'"

81, 82, 83, 84. Who was the writer?—I will come to that directly, my Lord; I am quoting now straight from Lord Shaftesbury: "'However valuable opium may be when employed as an article of medicine, it is impossible for anyone, who is acquainted with the subject, to doubt that the habitual use of it is productive of the most pernicious consequences, destroying the healthy actions of the digestive organs, weakening the powers of the mind, as well as those of the body, and rendering the individual who indulges himself in it a worse than useless member of society.' Some people may think it is a beneficial stimulus. This doctor says; 'I cannot

"but regard those who promote the use of opium as 'an article of luxury, as inflicting a most serious injury on the human race.' The first gentleman who signs this letter is Sir B. Brodie, and to the letter is attached this statement: 'The following gentlemen state that they entirely agree with Sir B. Brodie in the opinion expressed by him in the foregoing letter, and have accordingly attached their signatures to it: Sir Henry Hallford, Bart., M.D., F.R.S., F.H.S., President of the Royal College of Physicians; Anthony White, Esq., President of the Royal College of Surgeons, and Surgeon to Westminster Hospital; W. F. Chambers, M.D., F.R.S.; Thomas Hodgkin, M.D.; George Gregory, M.D.; C. Locock, M.D.; Robert Ferguson, M.D.; Henry Holland, M.D.; Anthony Todd Thomson, M.D.; Thomas Watson, M.D.; Charles J. B. Williams, M.D.; John Glendinning, M.D., F.R.S.; James Carrick Moore, Esq.; Benjamin Travers, Esq., F.R.S.; John Ayrton Paris, M.D.; John Forbes, M.D., F.R.S.; Richard Bright, M.D.; Robert Liston, Esq., F.R.S.; J. M. Latham, M.D.; Roderic MacLeod, M.D.; Cæsar Hawkins, Esq.; James Johnson, M.D.; Frederick Tyrrell, Esq.; and C. Aston Key, Esq.'" All those are surgeons and physicians with whose names we were familiar in our earlier days. That same view is entirely taken by the physicians in our time. I leave that in Dr. Maxwell's hands. We have a memorial of the same character signed by about 5,000 English physicians, and there is also another signed by a large body of medical men in Bombay, native medical practitioners most of them.

85, 86, 87, 88. Does that complete what you wished to say on the medical question?—Yes, on the medical question. Then there is a Blue Book of Lord Cross's which will also no doubt be laid before you. It is "The Consumption of Opium in India 1892." I will not touch on the Burmese part, because I think that may be called a settled question. But going into other districts of India there is a consensus of opinion on the evil effects of opium consumption. Colonel Clarke says: "The district magistrate, whom I have consulted, considers that 'the use of opium and ganja does not exhibit any abnormal sign of increase, alcoholic drinks, the consumption of which is increasing, being 'a counter attraction,' but he is in favour of reducing the number opium and ganja shops, as 'the evil effects of the indulgence in these drugs are perceptible in the large towns.'" Mr. F. C. Anderson, Officiating Secretary to the Chief Commissioner, Central Provinces, says: "I am to say that the Officiating Chief Commissioner agrees with the Commissioner of Excise in his remarks about distinguishing opium eating from opium smoking, and the greater importance of discouraging the latter in every legitimate manner." The Commissioner for Excise, Central Provinces, says: "Every effort should, no doubt, also be made to put a stop to the smoking of opium in all its forms, practices which are universally condemned as degrading and pernicious by all native opinion with which I have come in contact." Colonel G. H. Trevor, Chief Commissioner, Ajmere-Merwara, says: "A man who frequents a liquor shop is not so likely to become a confirmed drunkard as one who pays even a few visits to an opium den is likely to develop into a confirmed opium eater or smoker; it is to the interest of the vintner not to let him get intoxicated on the premises for fear the license should be revoked, and for the same reason not to encourage drinking that makes men disorderly. The liquor having issued from a Government distillery, its quality has been tested, and as a rule, it does not pay the vintner to change the quality except by dilution, which is common enough. These conditions do not, I believe, apply to the case of the opium den, at any rate in equal degree. There no attempt is made, or if made, it is more difficult, to check excess; and though excess may not lead to crime in the same way as liquor does, it produces a more lasting effect upon the individual, and through him or her on future generations." Mr. T. D. Mackenzie, of Bombay, says "the object of the Government, apart from the moral duty which rests on it to endeavour to encourage the people to detest intemperance, is to prevent the illicit consumption of opium, and any measures compatible with that object which can be shown to be effectual in decreasing the consumption, or checking the spread of the consumption of opium, will most readily

"be adopted." Then comes the Collector of Satara: "The vice of opium smoking evidently possesses a fearful fascination, when once it is acquired, and its effects are deadly, depriving the victim of all moral resolution. With these facts made palpable it is a serious thing for Government to offer any facility for acquiring the vice by licensing a shop, where any one is at liberty to make a trial."

89 and 90. Have the licenses for consumption on the premises been withdrawn?—They have been practically withdrawn, but Colonel Clarke says that the opium shops are the *rendezvous* of low characters and that such gatherings might well be interdicted by law. Mr. James, in Bombay, Northern Division (that is in Sind), says: "Some respectable persons might continue to smoke privately by themselves, while the lowest and most degraded would, as now, frequent the shop." The consumption of opium has been or should be reduced. There are a great number of witnesses to that. A report from Madras says:—"The Government is aware that the opium traffic is carefully watched by the agents and their assistants, and that so far from 'teaching the people to rely on opium as a febrifuge' we are doing all we can to gradually wean them from their hereditary habit of using it on all occasions." Wherever the prohibition has been tried it seems to have been attended with success.

91 and 92. Does this Blue Book to which you have referred and from which you have given us numerous extracts contain in any number opinions in another sense?—It qualifies some of those opinions which I have stated. For instance, the Chief Commissioner of the Central Provinces says:—"Under these circumstances I venture to think that it would be a useless task for the Government of this country to attempt to suppress altogether the use of the drug. All that it can properly do, and does do, is to secure the supply of a good article, or by suitable arrangements to make the retail price of this article as high as compatible with the prevention of smuggling." I believe that that has been honestly done. One gentleman in Assam says that he considers opium is a necessity.

93. At any rate you find a large body of opinion in support of the views put forward by your association?—Yes; and I will also, I think, add that I have quoted them in corroboration of what I stated in the commencement of my evidence, that I believe the Indian Government is alive to the evil, and is, at the present moment, doing a great deal more than it ever did before to restrict the local consumption.

94. Does that bring you conveniently to the question of finance?—If you please, my Lord.

95. I think I am right in suggesting that, as a man of experience in affairs, you will not fail to recognise that the Indian Government are under the necessity of raising a certain revenue, and that in the present financial condition there would be a serious difficulty in substituting other sources of revenue for that which is drawn from opium?—Of course, we all know that when we have not money to spend we begin to look at two things, one, increasing the revenue in other branches, and another, decreasing the expenditure. The case of the opium revenue has got into a much more easy shape than it was when I commenced with this subject. As I have shown the net revenue is now about 5,000,000 a year in tens of rupees, Rs. 5,390,000. It has gone down Rs. 3,000,000. The Indian Government in 1880-81, when it had the highest opium revenue, had a net income of 84,000,000 of tens of rupees; in 1892-3 the estimate for the net revenue of the Indian Government is 5,800,000 of tens of rupees. If the opium revenue had continued to grow, it would have been 9,100,000, but they have done without 3,000,000 of revenue; and Indian expenditure has gone up, as your Lordship will see directly, 14,000,000 of tens of rupees. Now where has it all gone? The army charges, exclusive of the Afghan war charges in 1881-2, were 13,800,000 tens of rupees; in 1892-3 the army estimate was 21,150,000 tens of rupees; in 1893-4 the estimate is 22,242,000 tens of rupees. The British soldiers were increased from 63,000 in 1885 to 71,000 in 1891; and the native soldiers are increased from 126,000 to 149,000; so that the army has gone up 31,000 men.

96. The native army?—The two armies have gone up 31,000 men, 23,000 of which belong to the native and the rest to the European army. There is an increased expenditure of something like Rs. 8,000,000 on the army. I am not in this chair to say that that

army expenditure is entirely useless or unnecessary, but it strikes any man looking at it that it is a very enormous increase, and whether the frontier policy of India is a wise policy or not—whether the annexation policy of India is or is not a wise policy—still I cannot help thinking that if reforms were properly carried out in the Indian expenditure, and if there should be a further development of the resources of India—I cannot help thinking that the opium revenue would form a very little item if it were all lost. There is a letter from Lord Lytton, dated from Malvern, in the "Daily Chronicle" of February 22nd, 1882, in which he says: "Wisdom, I suppose, is justified of her children in the long run, but the run is sometimes a very long one. No Indian Finance Minister has ever left to his successor such a splendid financial legacy as Sir John Strachey. No one who will take the trouble to study the finances of India without prejudice can doubt that they are in a condition which might be envied by almost any country in Europe. I have the satisfaction, such as it is, of feeling sure that this will be admitted some day, if the financial policy of my administration is not disastrously reversed. But I confess that I contemplate with considerable apprehension Major Baring's adoption of Sir L. Mallet's craze about handing over the public works of India to 'private enterprise.' No such enterprise exists, or can be created, at present in the country itself, where the normal rate of interest is 12 per cent. And how would the people of England like to see all their railways and canals in the hands of capitalists living at the other end of the world, ignorant of and indifferent to the conditions of English society and government, yet exercising upon these conditions, through a distant Parliament, in which the English people were not represented, a certain irresponsible influence, naturally animated and guided only by a view to their own exclusive interests as the proprietors of all the means of inter-communication throughout England? In the Indian railways the Government of India possesses a vast and annually growing property—and expanding source of revenue not derived from taxation, which exists in no other country—and to me it is as clear as the sun in heaven that the financial prosperity in India will in future depend mainly on the development of her railways and canals. People ask, 'What would happen if the opium revenue were to fail?' I reply, 'Cover the country with railways, and neither the loss of the opium revenue nor anything else need seriously disconcert us.' The population of India is 287,000,000, the railways are 17,564 miles. I believe the population of America is 62,000,000, and the railways are about 170,000 miles.

97 and 98. The annual income of the inhabitants would be very different in the two cases, would it not?—No doubt, it would be exceedingly different. Sir William Hunter says in his book that there are 222,000 square miles of cultivated area in India, and that the uncultivated but cultivatable area is 101,542 square miles. Therefore, I say that the development of India ought to be our answer to those who object to part with the opium revenue. Let alone the question of army or any other economies, such development would soon make up for the comparatively paltry revenue which is now left from the opium trade.

99. You have given us the aggregate figures showing the large increase of revenue in recent years; have you got the information as to the principal heads under which the increase has taken place, or may I take it from you generally that it was chiefly under railways and public works?—I have not the figures here. I think it was general, but railways contributed largely. I would hardly like to commit myself to a reply without looking further into the figures, but my general impression is that the main source was the increase from railways.

100. Have you any observations to offer with reference to the uncertainty of the opium crop? That seems to have been before Indian statesmen for a very considerable time. In the reply to Lord Hartington's Minute in June 1881 (I think Lord Ripon was then the Governor-General) there is the passage: "It is difficult to speak with any confidence as to the future of the opium revenue. Any opinion that may be given must, of necessity, be very conjectural." At the same time, the facts which we have so far elicited, that is to say, the necessity of raising the price paid for crude opium, the difficulty of extending

Sir J.
Pease, M.P.
— — —
8 Sept. 1893.

Sir J.
Pease, M.P.

8 Sept. 1893.

"the area under cultivation in India, the necessity which may be forced on us of reducing the quantity of opium annually offered for sale, and the increase in the production and the improvement in the quality of the Persian and Chinese drugs, which renders it doubtful whether a diminished supply of Bengal opium will enhance the price realised at the sales, and may indeed render it necessary to reduce the export duty on Malwa opium, all point to one conclusion, namely, that, although the total loss of the opium revenue does not appear imminent, it is by no means improbable that it may undergo a considerable diminution." Then in 1881-82, "Moral and Material Progress," page 33, signed by Lionel Tennyson, "The weather was, however, generally favourable to the growth of the poppy, and the quality of the drug was good. Fever was prevalent amongst the cultivators. The poppy is being slowly banished from the most fertile lands by the potato and the sugar-cane, as the value of those crops is being gradually enhanced by improved communication and European machinery. The system of advances is reputed to be the chief inducement to the cultivator to grow so precarious and troublesome a crop as opium, and that system is now being adopted by firms interested in other crops." December 1881, Letter from the Government of India on Finance, "On the whole, the evidence goes to show that, although we may be able to retain the present area of cultivation in the Benares Agency, we cannot count with any certainty on being able to extend it." E. Baring in 1883-4 quotes his own reports of 1878, "The process of depletion cannot continue indefinitely. An exceptionally good crop may, indeed, again replenish the reserve. But we cannot rely on a fortuitous circumstance of this sort. An average crop, or, at all events, a succession of average crops, will oblige us to resort to one of two alternatives, we shall be forced either to increase the production or to diminish the amount offered for sale." Then he goes on again in 1883-4 (Financial Statement, page 41), "So long as the value of the rupee and the opium revenue continue liable to such fluctuations as those which we have recently witnessed, the financial situation of India must always contain some special elements of instability." Then we have in "Moral and Material Progress, 1892," page 39, "It is reported that cultivators of opium have lost heart, after experiencing three bad seasons in succession; that new cultivators are gradually withdrawing from the industry, while there is a tendency on the part of older cultivators to lessen the poppy area cultivated by them in favour of the more robust and less precarious cereals. The Behar opium agent adds that 'the opium department have difficulty in maintaining their position, they cannot drop cultivation at will without losing it permanently.'" The "Calcutta Englishman" states, in 1891:—"The opium cultivator in India is becoming uneasy concerning the future of the industry. An idea that Government contemplates a cessation of opium manufacture appears to have obtained widespread credence in the opium-growing centres of Bengal, and many ryots, especially those near the great towns, are reported to have abandoned the cultivation of poppy in favour of potatoes or tobacco. The result is detrimental alike to the interests of the cultivators and of the Department, for, in the words of the Behar agent, 'When a cultivator has once severed his connection with the Department, and has begun to take advances from mahajans in another line of business, it is difficult to get him back.' The recent orders of Government reducing the area of cultivation, together with the bad out-turn of the past three years, have no doubt tended to accentuate the feeling of insecurity, and it is hoped that a successful season will go far to restore the confidence of the ryot." This I cut out of the "Pioneer" of Allahabad. After commenting on the danger to the Indian opium revenue from the increased cultivation of the poppy in China, the "Pioneer" says:—"Another cause which is slowly but steadily working against Indian opium is the growing unpopularity of the cultivation with the ryots, especially in Behar. They find that, with facilities of traffic and rise in the price of cereals, several other crops pay very much better than opium. Hence the cultivation of the poppy is gradually falling off. Tobacco, potatoes, sugar-cane, turmeric, chillies, and other condiments are more profitable in the long run than opium. The best lands of the village are no longer devoted to the poppy, as they once were, and if the ryots still adhere to the cultivation in poorly productive villages, it is

"simply for the sake of the opium advances which are, and have always been, a great incentive, not only to the cultivators, but to the landholders, who get their rents in a lump sum without much trouble. The process of decline cannot be arrested unless Government is prepared to compete with the rise in prices of other cereals, by paying a proportionately higher rate for opium, and thus counterbalancing the advantages of other more paying crops by its system of advances. Moreover, this make-shift of sowing the crop on inferior lands and getting the Government advances is gradually producing a discouraging effect on the cultivators. If there is one crop that needs superior lands and careful tending, it is the poppy crop. The cultivators find year after year that their labour and capital have been devoted in vain to a crop which will not repay their efforts, and they naturally become disheartened. There is a growing dearth, too, of good lands suitable for poppy in Behar, after providing for other paying crops such as those mentioned above, and for indigo." I have read these extracts to show that it is in the opinion of those best qualified to judge in India, not only what I believe to be an immoral revenue, but it is one that cannot be relied upon.

101. Have you any remarks to give us with reference to the revenue that is derived from the transit duty on opium from the Native States?—That revenue is a revenue, as is well known, per chest, taken from the opium grown. The chests in 1879-80 that paid duty were 46,211, carrying a duty of 750 rupees. In 1880-1 that had fallen to 36,000 chests, but the duty then was 700 rupees. In 1883-4 the chests fell to 38,586, and the duty was lowered to 650 rupees. In 1888-9 the chests fell to 30,000 (you see it had gone down from 46,000 to 30,000 in ten years), and the duty was 650 rupees. Now they only charge 600 rupees per chest, and the quantity, I believe, is still going down, or it is certainly at a standstill. Now, a chest of Malwa opium, I believe, costs fully as much as a chest of Indian opium, which runs to 427 rupees per chest. The pass duty now levied is 600 rupees, which makes the cost of a chest 1,025 to 1,027 rupees. The sale price of opium is stated in 1891-2, in the East India accounts, as a probable 1,000 rupees; therefore, there is not much profit out of it for the Native States beyond what the native princes obtain from a larger rent from the opium lands than from corn and cotton lands.

102. It is obvious that in imposing these heavy charges upon the opium grown in the Native States the action of the Indian Government does not tend to encourage the growth?—It looks to me as if it were a very falling revenue. The duty was lowered from 750 rupees a chest to 600; therefore, the Indian Government expected to get more opium from them, but the quantity has still been falling. Then there is a curious paragraph, to which I would desire to call the attention of the Commission. In the "Moral and Material Progress of India, 1888-9," page 9:—"The Native States have engaged so to manage their opium cultivation and production as to safeguard the British revenue, and in exchange for this service they receive either money compensation or other concessions." So it looks as if we were not only reducing the duty from 700 rupees per chest to 600 rupees, but that we were giving them either money compensation or other concessions.

103. (Sir James Lyall.) That was an arrangement, I think, to prevent its being smuggled into India?—I can only say what I have found—I think it is one of those points upon which the Commission would desire to have information.

104. (Chairman.) Are there any other points which you would like to bring before us in your evidence-in-chief?—I have exhausted the minutes which I have made, and I have to thank you for having heard me at such considerable length.

105. On the paper you place before me as the summary of your position, you allege that the opium trade is an immoral trade, and that if not an immoral trade it is as low a trade as can be conceived; and you urge that it is a decreasing trade, and that the difficulties of cultivating the poppy have increased; that China can upset the trade at any moment, and that as a source of revenue it cannot be relied upon?—If Sir James Fergusson takes the correct view of the policy of the British Government, that China may do in 12 months anything she likes—we are holding the Indian opium revenue at the mercy of

China. I would venture merely to say that if the Commission do not come to the conclusion that it is an immoral trade, I would lay before them the view that it is about as low a trade as you could possibly go into. For a great Government to be trading in a drug nine-tenths of which, it must be admitted, is used for debauchery and not for any good purpose, I think is about as low a position as could possibly be conceived.

106 and 107. (*Sir James Lyall*.) Is it a great Government that is trading in it? I mean as regards the Malwa opium, how can you say that it is the Government that is trading in the drug?—I did not say so, sir, I said that the Indian Government is trading in the drug in the Bengal Presidency. The other is a transit duty, of course. I think there is a considerable difference between a transit duty from native states, provided that you have the difficulty always that if you have the cultivation in the native states you have very great difficulty from the local position of the native states in dealing with the question of cultivation in your own country.

108. (*Chairman*.) Moved by philanthropic considerations which I am sure we must all appreciate, you have evidently taken immense pains and interested yourself very deeply in the consideration of this question: I understand, Sir Joseph, that you have not personally visited India?—I am sorry to say that I have not personally visited India or China. I have endeavoured to show, perhaps, at too great a length, the reasons which have actuated me in my humble share in the anti-opium campaign. I am accused of being a crazy philanthropist by some of my Indian friends, and can only say that I have felt it my duty to collate facts and draw deductions from them. I do not think that I am one of those people who are carried away by enthusiasm on any given subject. I have endeavoured to lay before the Royal Commission the views which have actuated me over a long period of years in endeavouring to do away with the share of the Indian Government in a trade which, to use Lord Cornwallis' words, "ought to be abandoned out of compassion to mankind."

109. And in the capacity that you thought it your duty to take upon yourself as president of the Anti-Opium Association, you have had, and no doubt are constantly having, placed before you communications from all parts of the East in which this trade is being conducted, and in which the opium drug is being used?—Well, I suppose that when a man takes the position that I have taken on this subject, I think every member of this Commission will know that he becomes the centre for letters of all sorts and shades of character, and out of that large correspondence there is often a difficulty in weeding out error from truth; but I think that that which I have kept and preserved is that which carries to my own mind the conviction that it was based on truth and did not belong to the spurious or erroneous.

110. (*Sir James Lyall*.) You referred, Sir Joseph, to the anxiety of the Indian Government in 1869 and later to increase the growth of opium. I should like to ask you, did not that refer entirely to the supply for the export trade in Calcutta? That growth was intended to be for that?—I have no doubt it was entirely for the export trade in Calcutta, which was then at a much higher rate than it is at present, and was entirely confined to the cultivation in Bengal.

111. Has not the Government of India given up the idea of extending the growth, and agreed to greatly diminish it if it makes any change; that all change should be in the direction of diminution of the growth?—I hope so, but when I got those figures of the acreage it did not quite bear out that view, because, as I said in my evidence-in-chief, in one or two years there was a little jump-up, but the Government resolution (which I suppose is practically binding on the Government of India) the other day was:—"That this House presses on the Government of India to continue their policy of greatly diminishing the cultivation of the poppy, and the production and sale of opium." That is in accordance with the policy enunciated by the late Mr. W. H. Smith, which, I suppose, is really the policy of the Government, and which was again pressed upon the Government of India by the resolution which was carried in June this year in the House of Commons at Mr. Gladstone's suggestion.

112. I think you admit, Sir Joseph, that the question has two entirely separate sides—that is the internal consumption side, and the export to China and other

countries, the export trade side?—I have always taken that view, that the Indian side of the question was not nearly so important as the Chinese side of the question.

113. I was going to ask, do you not admit that the system in India, as far as regards internal consumption, is a very strongly repressive system?—I think it has become so lately owing to the agitation in this country increasing the vigilance of the Indian Government, and opening their eyes to the harm that was likely to arise from a larger local consumption.

114. Have you ever tried to think of any material improvement of that system which could be suggested?—I do not see that there is any other mode than total prohibition of the cultivation of the poppy except for medicinal purposes, and the sale by license of medicinal opium. In this country no one can buy opium, but at a druggist's, and it has a registered sale.

115. Do you think that the English system of sale by druggists really stops anybody from getting opium who wants to get it for non-medical purposes?—Of course it is very difficult to compare English habits and tastes with Indian habits and tastes, but I have no doubt the policy is restrictive. I cannot doubt that.

116. I went the other day into a chemist's shop, and being suspicious that probably the system in England would not repress it if anybody wanted to get it for non-medical purposes, I asked him and he told me that anybody could get opium who likes?—Yes.

117. And he gave me instances of many people—one lady, for instance, who was getting from his shop 10 ounces a week of laudanum for her consumption, and he mentioned that in a few places in England, where the use of opium for non-medical purposes is common, the druggists had the opium made up in packets ready for their customers as they came in. Well, are you aware, supposing that to be correct, that the number of druggists' shops in an English town or an English neighbourhood is very much larger than the number of opium shops in any part of India with which I am acquainted?—I have had no statistics before me, and I could not give an opinion, but what you state is perfectly true, that if you want to buy it you can buy it, but you buy it under these restrictions, that the man that sells it is a registered chemist, and he has to mark the thing as a poison.

118. He marks it as a poison, but that is a mere distinction in name. Anybody who wants to use it for non-medical purposes can use it. That is what I hear, and that is what naturally seems to follow?—I think there is very great reason to believe that there ought to be further restriction in this country.

119. In India we have not even the chemists. I think you remarked that the growth of Indian opium is not only for the purposes of the drug, but for the purposes of intoxication; but are you aware that opium is very largely used in India as medicine, and that, perhaps, with the exception of the few English, or people who are prescribed for by English physicians, and who are a mere mite amongst the mass of Indians, that the other Indians, if they use opium for medicine, use the Indian opium?—Yes, I am quite aware that they use it, but whether it is used for medicine or not I do not know.

120. It is used largely for medicine by every native physician, every native Hakim, every old woman who prescribes in her own neighbourhood for medicine?—Whether that is a judicious administration I very much doubt.

121. I know; but it is very largely used?—I think Sir Benjamin Brodie's paper and other papers that I have read in the "Lancet" take the same view, that it is a drug, and must be treated as a drug.

122. You mentioned, Sir Joseph, the fact of an advertisement of an opium shop in a railway carriage on a State line; have you any reason to think that that advertisement was put in by the Government and not by the owner of the shop?—No, but the Government licensed the shop, I suppose.

123. Licensed the shop?—Or licensed the seller.

124. The Government license a public-house in England, but that is repressive. As to the advertisement in question, have you any idea that that advertisement was put in by the Government and not by the owner of the shop?—No. It does not make any

Sir J.
Pease, M.P.
8 Sept. 1893.

Sir J.
Pease, M.P.
8 Sept. 1893.

matter in the view I take who put the advertisement up. The man sells the Government opium, and the more he sells the better for the revenue and the worse for the people, it seems to me.

125. There was a reference to a clause in the vendor's lease?—License.

126. That they must sell a certain amount of opium, or else, at any rate, pay for that certain amount of opium?—Yes.

127. That has been abolished?—Lord Cross recommended that it should be abolished.

128. It has been abolished, and I do not know that it is worth perhaps much referring to; but are you aware what the object of that clause was?—I saw that in Lord Cross's blue book it is stated that the object was to prevent smuggling and the consumption of illicit opium. How that could do it I cannot tell.

129. Well, the object was actually to protect the revenue, not to increase the consumption?—It says, "prevent the consumption of illicit opium."

130. You could not make a man sell more by putting that in?—Well, it makes him very desirous not to be fined, and to get the profit on what he had sold.

131. All these men are desirous to sell as much as they can I am afraid, but you would not increase their desire?—I think you would increase it very much. If you fine me for every ounce of the article that I do not sell, then you take away part or the whole of the profit I have got on the number of ounces that I do sell.

132. The object, both in the case of certain spirit licenses and the opium licenses, I believe the stated object was this. It was found by experience that the men sold a great deal more than they put down in their returns, and it was known to be impossible, and shown by statistics to be absolutely impossible, that they could pay the license duty which they did pay if they did not sell a great deal more than they admitted in their returns. To meet that, an amount was put down which was known to be well within the amount which they actually sold, so as to secure that Government should get that, the duty?—To the unsophisticated mind it can only bear one view, that the man had to sell the amount in the license. Taking it for granted that you are dealing with an honest man, you would not give a dishonest one a license—at any rate the magistrates in England do not license a dishonest publican if they know it, and you immediately say, "you have not sold as much opium as you ought to have sold, and therefore you are fined," and you take away the profit of that which he has sold. It is a mysterious clause, rather.

133. I think you said that probably the Chinese only favoured, as it were, the growth of opium in China because they were under a certain amount of pressure or compulsion to admit our opium, and they preferred, if opium was to be used, that the Chinese should get the dollars and not the Indians?—I think there is no doubt that what I consider to be the forced introduction of English opium into China stimulated very materially the home growth. I believe the Indian opium is of a much better quality, and is liked by the richer class in China, and that the others not being able to buy English opium grow their own.

134. I want to ask you with reference to that, why do you think they admit Persian opium?—Into China?

135. Into China, because they never have been under any pressure or compulsion to admit Persian opium?—I do not know; the Persian opium is by far the finest quality of opium.

136. Well, Persian opium goes in largely; why do they admit it; if they only admit Indian opium, which is also a very fine quality, under pressure, why should they admit Persian opium?—I do not know. I must not ask you a question, but Persian opium comes through India.

137. You put great weight, Sir Joseph, on the Government of Bombay's objection to permit the cultivation in Bombay, when the question was raised by the Government of India. Is it not the case that the Bombay Government never proposed to prohibit the supply in the ordinary form common over India, but that it only argued that the old Indian policy whereby cultivation was prohibited in Bombay and Madras, and those provinces were made to rely on supplies drawn from the poppy grown in the native states, should be

maintained?—It went a great deal further than that; it said that if it was not maintained it would be attended with very detrimental results; in fact the word "moral" comes into it.

138. Yes, but was not the reason that if you allowed cultivation which had been always prohibited—which has always been the policy of the Government of India in Bombay and Madras, there must be a certain amount of leakage and untaxed consumption. Was not that what the Government of Bombay meant?—I do not know what they meant; all I know is what they said that if it was grown there, it would be attended with moral disaster.

139. I think you referred to the Californian law and the Australian law. I think those are both laws for the prevention of the consumption of opium on the premises?—Yes, anybody selling and dealing.

140. For sale on the premises?—The Californian law goes a great deal further than that. It evidently was passed under a sense of the demoralising effect of opium on the Chinese population in the first instance, and that being communicated to the Europeans, and I had a call from a gentleman who is the present Prime Minister of Victoria, who told me that the feeling was exceedingly strong in the Colony, that the Chinese had communicated the habit to the younger Europeans, and that girls were seduced under the influence of opium, and that there was a strong feeling among the whites as against the Chinese and against the opium trade.

141 and 142. The Bill, I think, referred to consumption in shops on the premises?—I do not like to read a whole Act of Parliament, but these are the marginal notes:—"Opium not to be imported except by licensed importer and for medical purposes." "Restriction on importation." "Opium imported contrary to this Act to be forfeited." "Importer not to sell opium except to medical practitioners, chemists, members of College of Veterinary Surgeons, or licensed persons." "Except under Poisons Act, no person to buy opium without a license." "Commissioner may grant annual licences to buy opium." "Entry of sales of opium by importer." "No person to smoke opium." "No person to eat or drink opium, except as a medicine." "No person to prescribe opium unnecessarily."

143. That is the Australian Bill?—That passed the Lower Chamber, but not the Upper Chamber, because of the dissolution.

144. You read, Sir Joseph, some terrible descriptions of the evils of opium-eating in China?—Of opium smoking.

145. Do you not think that those remarks apply mainly to cases of gross excess, and that perhaps, in cases of gross excess in spirituous liquors the same sort of terrible descriptions might be composed if the question were raised?—I am afraid it would be very difficult to limit the descriptions of the damage done by excess in spirituous liquors, but I think that these quotations which I have read prove that opium is a much more insidious poison; but my objection is that we are trading in this poison for the purpose of raising revenue, and we are selling it for the purpose of raising revenue. Having found that it is detrimental to other nations and to other people, it is wrong for us to raise a revenue by continuing in the trade.

146. I wanted to ask you this. Supposing it to apply fairly to opium consumption as a whole, how would you explain the fact that the Chinese in the Straits, in Hong Kong, and in Shanghai, which is a British possession or settlement in China, in California, and in Australia, are (as regards a large proportion of them) opium smokers, and yet as merchants, clerks, tradesmen, agriculturists, artisans, and labourers they are admitted to be very shrewd, industrious, and successful, not only easily beating the Indians, the Burmese, the Malays, and the Japanese who meet them, but you will find them also beating Europeans, and being notorious among all Asiatics for honesty in performing their contracts?—My experience is that an excess of stimulants, occasionally taken, has often characterised some of the very best workmen I have known. Of course, you do not get the same time out of the men as you do out of a steady and sober man, but it is unfortunately the case that among your very best workmen some will give way to habits of drinking; but that does not take away what I call my responsibility in going into the trade, that is to supply them. They may do what they like, but I must do right.

147. I think, in coming to that, that your great objection is the position which the Government occupies in that particular Bengal opium growth?—I say I have no right to be in a trade which is detrimental to other people. Other people may do it, but I have to form my own opinion of what is right.

148. It is the case, I think, is it not, that the Government is only in that position in Bengal, where it manages the growth, we may say, and certainly carries out the manufacture?—The Bengal case is far worse than the other, though I have stated already that I should have thought, if the Malwa trade is to be purchased, and the native princes are getting very little out of it, that the duty of the Indian Government would be to try and give these concessions to Malwa for something which was much more valuable to them than the growth of the poppy.

149. What concessions?—The concessions named in that blue-book, the purchase of opium concessions.

150. I believe those concessions are simply concessions given to some States upon condition that they would not allow opium to be cultivated at all?—A very good concession, too.

151. And to another State the concession was given on the ground that it would actively exert itself in preventing smuggling. All this you would find probably entirely unobjectionable?—It says that some of them are cash. If the Indian Government could do without the revenue, the opium trade might be stopped; because every one would admit that it is only on the ground of revenue that there is any excuse for carrying on the trade.

152. I wish to ask rather a hypothetical question. Supposing the Chinese Government were sincerely anxious to restrict and reduce, but perhaps found it could not absolutely prohibit the consumption of opium, but wanted sincerely to restrict and control the consumption, would not its most practical and natural way of proceeding probably be rather to follow the example of the Indian Government, as we say, what the Indian Government does in Madras and Bombay, that is, to begin by prohibiting the import of opium?—That would be, no doubt, the first step.

153. Excepting very limited amounts and under a heavy duty and then it would go on to prohibit the growth entirely in China, and so get the foreign opium into its hands as we do in Bombay and Madras. We allow no cultivation, we allow a certain amount to come in from the native States and with that carry on a very restricted supply to the people at an enormously high price, compared with the natural price of the article. Would not that be really the way in which the Government of China would probably act?—It is a very hypothetical question, but I should think you have very likely depicted what the course of the Chinese Government would be, which would, of course, have my hearty co-operation with the view of steadily diminishing the quantity.

154. Might not the Government of China, if it began to do that, find it necessary to take up very much exactly the same position as the Government of India does in Bengal, except probably that they would not export it?—Might they not refuse to allow cultivation except by licensed cultivators, and to insist that all the opium produced should be made over to its government agents?—Yes, and if the Government of China pressed

upon the governors of the provinces, as we are proposing to do upon the Government of India, to continue a policy of greatly diminishing the cultivation of the poppy, I should think the world was getting better.

155. (*Chairman.*) You are not sure that the Chinese Government may not be influenced in their treatment of this question by considerations of revenue?—I think they are.

156. And though they recognise the moral disadvantage to their people they may possibly be governed by considerations of revenue, and hesitate to adopt a policy of prohibition on that account?—My belief is, from communications which have been made to me by those who have seen and called upon Li-hung Chung, who is the great Prime Minister of China, that the Chinese will not believe in the sincerity of the British Government in regard to giving up the introduction of opium into China. "If," they say, "we were not going to send opium into China, their opium policy might be considerably altered."

157. (*Mr. Pease.*) I only wanted to ask, was there not some limitation to the opium or poppy that could be grown in Malwa?—I am not aware that there is any limitation, it is entirely, I believe, in the hands of the native rulers.

158. Is the reason why the quantity of poppy grown in Malwa has decreased because it is not profitable?—The price of the chest was at one time 1,300 rupees. It fell to 1,100 and stood about 1,100, and now it has been latterly 1,000; there was a little rise, then the other day there was a very heavy fall on the Government measure for the stability of the rupee, which I should imagine to be rather a temporary fall, and it is because instead of getting 100 or 200 rupees per chest above the cost of duty and manufacture, they can get very little out of it except that which the native ruler gets in the increased land tax for the better lands on which the poppy is cultivated.

159. Was the reduction of the transit duty made for the purpose of stimulating the cultivation of the poppy in Malwa?—I believe it was to meet the views of the native rulers, who said that they could not get their opium into the Calcutta market at the higher duty of 700 rupees per chest with a cost of manufacture of 425 rupees more.

160. And if the old transit duty had been maintained?—Yes; probably the trade would have died out; it could not possibly, I believe, have existed with the 700 rupee duty.

161. (*Mr. Mowbray.*) I do not know whether we shall have any of the medical evidence of the medical missionaries which you quoted?—No, I did not quote any medical evidence. Dr. Huntley, I believe, will be called before your Commission in India. I did read, at your Chairman's request, an extract from Dr. Huntley. He has lived in the Rajpootana for a long time, and there is another medical man who has lived in Rajpootana.

162 to 165. Could you tell me when the manufacture by the Indian Government began what was the origin of the manufacture?—I cannot speak as to the date, but I believe it was a manufacture which was carried on under the old East India Company, and was inherited by the British Government when they took possession of India, and the Company was dispersed. I believe it is almost from time immemorial.

The witness withdrew.

Rev. JAMES LEGGE, Oxford, called in and examined.

165. (*Chairman.*) You are professor of the Chinese language and literature at Oxford, are you not?—Yes.

166. You resided many years in China?—Yes; I resided in China, or rather I would say among the Chinese people, because I never resided out of Her Majesty's dominions. Three years and a half I lived in Malacca, which is part of Great Britain, and then about 30 years I resided in Hong Kong.

167. In what capacity?—As a missionary, in connection with the London Missionary Society.

168. Long residence in those countries has of course enabled you to form an opinion with reference to the opium question?—It certainly did; and while resident in Hong Kong I visited many places in China, and latterly I visited Peking itself, and all the open ports and mission stations in the north.

169. So that you have had a wide observation of the people who are consumers of opium?—I have.

170. Will you tell us what is your view as to the effect of the smoking of opium on the part of the people of China?—Well, let me say that during my first residence in Malacca opium smoking was not so common as it subsequently became. I heard much of it, but I saw little. I had an example that impressed me very much with the tenacious hold that the habit keeps upon its victim. As soon as I began to be able to talk in the language, I went every day visiting among the people, and encountered a young man of more than usual gentlemanly manners and address. I found he was from a very respectable family in China, but because he had formed the opium habit they sent him out of the country in the hope that a visit to Malacca might wear him from the habit. I became interested in the man, invited him to take up his abode

Sir J.
Pease, M.P.

8 Sept. 1893.

Rev J. Legge

Rev. J. Legge.
8 Sept. 1893.

with me in the Anglo-Chinese College at Malacca, which was then under my care. He came, and we had very friendly intercourse together; but all at once he disappeared. I had made it a condition with him that he should not smoke opium in the college. He disappeared; and never came back. On my asking about him among his friends, I found that he had died, or that he had disappeared altogether. He tried, I believe, earnestly to break off the habit, and thought through his acquaintance with me, that he had an opportunity of doing so, but it was all in vain. Then, when I went on to China, wherever I went I encountered opium smokers, and found that there was no evil so much deplored by the respectable classes of the people as this habit. I found that no respectable man could tell me of any good that opium had done, but every man had his own narrative of evils, deaths, suicides, misery, ruin, that it had produced. And my own observation, as I became familiar with the people, and I had a large circle of acquaintances among them, confirmed the reports that I got from those around me.

171. You have been speaking of the opinion entertained by what you call the respectable classes?—The respectable classes; but I never, even among opiumists themselves, heard a man who had a word to say by way of apology or excuse for his habit. You will find no one in China, I believe at the present day you would not find one, who, however devoted he might be to the habit, would say anything in its favour. I may just mention, as having been a missionary, and come very much into contact with the Chinese, and associating with one missionary society and another, that there is not, among all the thousands of churches that are growing up and making a profession of Christianity, there is not one which would receive a man into its communion who was in the least degree addicted to the smoking of opium. When converts in connection with myself began to increase in number, so as to form a community, I brought the subject frequently before them when all the principal members of our church were assembled together. I did so because I wished to train them into the way of feeling that the responsibility of receiving fresh additions to our numbers rested with themselves and could not and ought not to be devolved upon their missionary and pastor. On several occasions I acted the part of what we call the "devil's advocate." I would say to them, "Well, here is this man who makes application to be baptised and to be admitted as a member of our community; he is said to have a good character; but if any of you know it to be otherwise, you ought to come forward and declare it. I do not know that he is at all addicted to the habit of opium smoking; but if he be, you must make up your minds whether you will receive such opium smokers. And do you think it is worse to take a pipe of opium now and then than it is for the members of many, perhaps, of most in other churches, to take a glass of wine now and then?" And they would reply to me, "Why, there is no analogy between the two cases; you take your glass of wine and it does you no harm; you abstain from it, and you do not feel any great craving for it; but when a man once begins the habit of taking opium, it grows upon him, he cannot refrain from it; he is miserable until he gets his usual dose; we cannot receive into our communion one addicted to the least indulgence in opium smoking; if we did, the end would be our own disgrace and injury." Such is the universal feeling on the part of all Christian converts in China.

172. Is the practice of smoking opium one which prevails widely among the more well-to-do classes?—It prevails widely, and it has increased very greatly within my own experience; but without statistical information I am not prepared to say what percentage of Chinese may smoke opium. I do not think it is so large as some have asserted, and I do not think it is small.

173. Comparing the masses, is it with them rather than with the more well-to-do classes that the consumption of opium most widely prevails?—Well, that also is a difficult question to answer. There is no class that is free from it. It manifests its presence sooner among the poorer classes than among the richer, for when a man is wealthy and indulges his desire for the opium pipe, and yet is able to live comfortably otherwise, have sufficient nourishing food, good housing and clothing, the habit does not tell upon his physical condition, so soon as it does upon the poor man. I have often had a dozen men brought before me to see whether I could tell which was an opium smoker and which was not, and it was very seldom that I made

a mistake. The sallow countenance, general appearance, emaciation of the opium smoker for the most part revealed his character.

174. The Chinese stand high, do they not, as a race, for their powers of industry?—They are the most industrious people I ever became acquainted with.

175. And physically a powerful race?—Yes; they are not generally so tall, perhaps not so muscular as Englishmen are; but I have often come into contact with a Chinaman from whom I was glad very soon to get quit.

176. They are good workers?—They are good workers.

177. And I suppose many of those Chinamen who are good workers are to some extent consumers of opium?—Not many of the best workers; no. When an opium smoker comes under the power of his habit, he cannot work so well unless he refreshes himself every day with his pipe.

178. And are you under the impression that it is exceedingly difficult to indulge to a limited degree in his form of indulgence, and that most people who take any opium at all take too much?—That is my view.

179. Is there anything that you would like to say to us further with regard to the injury which is done to the Chinese people, physically, and mentally, and morally by the use of opium?—No; I might sum up what I have to say, that from all I have known and seen of the habit of smoking opium, I should say that the drug does evil, and nothing but evil, and that continually.

180. Have you anything to say to us with reference to the public feeling in China with reference to our policy in promoting a traffic between India and China in opium?—I have written down what I should say on such a question.

181. Will you read it?—I have often heard an indignant expression of complaint against England; but few of the Chinese are sufficiently acquainted with the geography and history of our Indian dominion to complain specially of our Indian policy, of which they are the victims. They know that the use of opium, except for medical purposes, is forbidden here at home among ourselves, and why should we, they have often asked me, try to force it on them? They have done so in the past, and still continue to do so. Their statesmen are better acquainted with our Indian policy; but their suggestion to Sir Rutherford Alcock for a modification of our Indian policy was not received generously, and did not meet with acceptance. In concluding what I have to say in reply to your question, I may be allowed to relate part of a conversation which I had with Kwo Sung-tao, the first Chinese ambassador who was appointed to this country. I called on him soon after his arrival in London, and he welcomed me to the Legation. Among other things which he asked me was this, "Whether I thought China or England was the better country." I told him at once that I thought England was the better country. He was disappointed, and said, "Well, I grant you that you have finer public buildings, finer offices than we have, more engineering skill, and that altogether England is a cleaner country than China. But that is not what I mean. I mean looking at the two countries from their moral standpoint;" and that moral standpoint, as he expounded it, was as to the appreciation of benevolence, righteousness, propriety, conscientiousness, and good faith. I told him that was a more difficult question to answer; but while I knew what high ideas of those virtues the Chinese had, I thought many of the English took higher views, and tried to carry them out more than the Chinese did; and, looking at the two countries or peoples from that standpoint, I still thought England was the better of the two. I never saw a man more disappointed; he anticipated quite a different reply. He took a couple of turns across his reception-room; then planting himself before me, he said, "You say that England, looked at from a moral standpoint, is better than China; why, then, let me ask you, has England tried to force upon China her opium, and still continues to do so?"

182. At what date did this conversation take place?—Soon after his arrival; more than ten years ago; I think it might be in 1877.

183. This Chinese gentleman would hardly contend that at the present day the power of England would be used to force the trade in opium on the Chinese?—I hope no such ideas are springing up on the subject regarding England.

184. Certainly not?—But when I had that conversation with Kwo Sung-Tao I suppose there were 70,000 chests of opium going from India to China. I suppose that the Indian Government this year will send at least 80,000 chests.

185. It was immediately open to the Chinese Government to exclude the Indian opium from China; if they think fit they can levy a prohibitory duty?—The Chi-fu Convention had not taken place when I saw him then, but still the legalisation of the opium trade after the Tientsin Treaty had taken place.

186. The position at present is that the Indian Government does allow the export of opium to China to take place, subject to a very heavy export duty imposed in India. It leaves it to the Chinese Government, if they think fit, to exclude the importation of opium into their ports, either by an edict of prohibition or by levying prohibitory duties?—Well, I wish they would set about doing so. It is not easy for them; at least they do not seem to think it easy for them, because they have not done it.

187. The Chinese have not done it?—And the production of opium among themselves has been increasing more and more.

188-9. Have you anything to tell us as to the time when and the way in which the cultivation of the poppy and the use of opium were introduced into China?—So far as I have investigated the matter, and it is a matter that requires a good deal of research, I think they first became acquainted with opium and adopted the name of it in perhaps the eighth century, during the period of one of their greatest dynasties, the Tang dynasty, a powerful dynasty that attracted people to itself on visits of curiosity and of business from the west. Then the Arabs came into China. Mahomedanism, if it had risen, had not become at all vigorous, but the Arabs came into China, and the Chinese took the name and became acquainted with the flower, though not with opium, I think, at that early time. A-phirn is not the proper Arabic name, but it is a name for it there; and the Chinese call it ya-pien, and A-fu-yung, evidently in the imperfectness of their phonetic methods trying to reproduce the word. After the first introduction they were pleased with the flower as a matter of taste; they began to cultivate it; by-and-by they became acquainted with its use as a medicine, and their attention was specially taken by the capsule and its seeds, and they called then the poppy, the “jar-millet,” comparing its hood, its top, the capsule to the form of a jar, and its seeds to millet or any other seed with which the jar might be filled. They became acquainted also with its medical use in dysentery and the power to produce sleep, and gradually they began to plant it; and soon after the fifteenth century it had taken root, not earlier, I think, than the fifteenth century, in Sze-ch’wan, Kansah, and the other provinces in the west of China, and gradually they began to appreciate the sensations which the partaking of the opium juice gave them. I have read a comparison stating that it was like what we call nectar, that it furnished a drink fit for Buddha himself. As time went on, the habit of eating opium, and of drinking an extract from the seeds, grew, but not yet the habit of opium smoking. Opium smoking was introduced from Manilla or from Java by the Spaniards or by the Portuguese.

190. In the early voyages, do you mean?—Yes, in their early voyages, and that was only discovered lately by a medical missionary in Peking, Dr. Dudgeon, in his readings of a topographical volume, in which literature China is richer than all the rest of the world together; and in an account of one of the small departments, half the size, perhaps, or the whole size, of one of our counties, he found an account of the introduction of this habit, which came in connection with tobacco. First, they became fond of smoking tobacco. Just about the same time that the habit was introduced into this country, and king James published his Counterblast against Tobacco, then the Chinese were forming the same habit, and adding to their tobacco some more or less of opium in order to make their smoking more tasty, more pleasant to themselves. The habit spread from the Island of Formosa, and it passed over into Amoy and other cities of Fu-kien; and, in 1729, the attention of the Government was directed to the habit, and an edict was published in that year, denouncing the habit and forbidding, under severe penalties, the smoking of opium and the opening of houses for opium-smoking, as shown in Dr. Edkin’s historical note on opium. That was the beginning of the agitation in China

against smoking opium, and, of course, from the publication of the edict in 1729 the introduction of opium became a smuggling trade; and the East India Company, from the time of its operation in China, was well acquainted with the Imperial edict against opium, well acquainted with the fact that to bring opium from India or elsewhere to China was an act of smuggling. It can be proved by various instances that the East India Company was acquainted with this, and forbade, in consequence, the sending opium to China in any of the Company’s vessels, yet not interfering with the introduction of it elsewhere. Why, a good many years ago, when the question of opium smuggling to China came up in the House of Commons, a letter was read from a Mr. Fitzhugh to some gentleman connected with the direction of the East India Company, explaining its character, and expressing his great surprise that such a trade should be persevered in which was death to the smoker and absolute ruin; and his letter concluded with expressing his great regret that, if England adopted this practice, the character in which the East India Company was held would go down in China, and the whole of the Europeans in that country would be disgraced.

191. (Sir James Lyall.) What year was that?—We have quite sufficient evidence that the prohibition was well known to the Directors of the East India Company. Mr. Fitzhugh, in China, in 1782, when it was being discussed in Calcutta whether a new departure should not be taken by the Indian Government by sending to China opium in a greater and more open manner than had yet been done, replying to the inquiries addressed to him on the subject, said: “The importation of opium to China is forbidden on very severe penalties. The opium, on seizure, is burned, the vessel carrying it is confiscated, and the Chinese in whose possession it is found is punished with death. It might be concluded that, with a law so rigid, no foreigners would venture to import, nor any Chinese dare to purchase this article; yet opium has for a long course of time been annually carried to China, and often in large quantities, both by our country’s vessels and those of the Portuguese. That this contraband trade has hitherto been carried on without incurring the penalties of the law is owing to the excess of corruption in the Executive part of the Chinese Government.” His letter concludes with adverting to the high opinion of the East India Company entertained by the Chinese, and thus concludes: “How must this opinion change when your servants are to deviate from the plain road of an honourable trade to pursue the crooked path of smuggling!” This was written in 1782, 50 years before the occurrence of our first war in China, and for more than 50 years before that the smoking had been carried on with a knowledge of the position in which it was placed by the Chinese Government.

192. (Chairman.) You have given us an historical sketch going up to a very early period; and I suppose we may take it from you that the habit of smoking opium and the cultivation of the poppy in China did not originate through the intercourse with Englishmen, but it began long before there was any intercourse between England and China?—I do not believe myself, I have seen no evidence to make me think, that opium was ever produced in China, excepting as a medicine, until after the rise of this habit of opium smoking in Formosa soon after 1700. It was at Amoy, in the fields about Amoy, that opium first began to be grown.

193. Is it within your personal knowledge that there has been any considerable increase in the cultivation of the poppy in China of recent years?—Yes; at present that is my own view. Of course every year the increase has gone on with accelerated rapidity, and to a greater extent; but in 1873, as my departure from the country drew near, I went for a couple of months up to the north, visiting the different mission stations at Shanghai, Chi-fu, Tientsin, and went on to Peking itself. In returning en route for England, I went from Peking by mule cart to the province of Shan-tung, and visited the old cemetery to see the grave of Confucius; and all the way from Peking I saw opium fields.

194. What is the distance?—Well, it took us 15 days, perhaps 40 or 50 miles a day, and as we drew near to a village of Ch’u-fou, where Confucius had lived, and which is very much peopled by his descendants at the present day, I saw a field of opium in bloom, and near by were a number of grey-headed men—old men—seated on a dyke, talking together.

Rev. J. Legge.

8 Sept. 1893.

I went up to them with my companion, who was the Rev. Dr. Edkins, and we expressed to them our sorrow at seeing the field of opium, especially so near the grave of Confucius himself. One of the old men, with quivering voice, said, "Yes, you are sorry; but I am more sorry!" He said, "My relatives, my friends, my family, have long dwelt here; our young people have grown up in decent, industrious, respectable habits, but they will not do so much longer." I was affected almost to tears by the feeling of the old man,—his feeling the injury that was being done by the growth of opium, and that the injury would extend to his descendants.

195. Was this man that you are speaking of one of the descendants of Confucius, do you say; did he claim that?—I do not know, but soon after that I asked one of the descendants of Confucius, who was one of my barrow-men in travelling to the Grand Canal, and he said there were about 40,000 of the same surname.

196. It becomes a sort of clan or tribe?—Then I went to the palace of his descendant, the only duke in China, who has got landed property.

197. Did you make any other journeys—inland journeys—in China, which would enable you to form an opinion as to the extent of the growth of the poppy?—No; but all along that way, from Pekin to Shanghai, there was the opium growing. By that time the Yellow River, the river of China's sorrow, had changed its course, and instead of falling into the sea where it had done for more than a century, it had turned its course north. After crossing it just on the borders of Shan-tung—crossing its new course—then we went on and came to a high bank, from which we saw its old channel, through which for some 500 miles it had run on to the sea. There was the hollow of the old channel filled with fields—not absolutely filled—but dotted here and there with fields of the poppy plant in bright bloom. That was my experience. But of late years, in the great provinces of the West, the growth of opium has increased, extended. I should think, now that the opium supplied from the native fields is perhaps five times as much as what they get from India.

198 (*Sir James Lyall*.) I would like to ask one question: Is any alcoholic liquor drunk in China?—Very little. In 34 years, and often in very large cities, from Canton of a million and a half down to cities with a population of 200,000 and 300,000 persons, in those 34 years I never saw but one Chinaman drunk, and he was not very drunk.

199. What do you think is the reason that they avoid liquor and smoke opium? Is there any idea that one is disgraceful and the other not, or anything of that sort?—Their temperance is owing to their having drunk tea for 2,000 years, to the abundance of tea, and owing to the teaching of their schools. There is a great deal of moral training and moral feeling in China, much more than we are prepared to give them credit for.

200. Then with the moral training and moral feeling why does not that tell against the smoking of opium?—It does tell against the smoking of opium.

201. Not so successfully as against the liquor?—Though people have been enslaved, become victims to the habit themselves, they all speak against it, and lecture each other about it. Largely even as it has increased, I believe that the percentage of opium smokers in China is not more than 20 per cent. of the population; but it is increasing very largely from year to year, and the ruin of China becomes more alarming, more threatening to be irrecoverable.

202. I was in Japan last year, and in Japan opium is prohibited.—Yes, it is prohibited.

203. It always has been, but liquor is drunk everywhere, is procurable everywhere, and the Government raises an enormous revenue out of it?—If we could have had our way the Japanese would have been customers for our opium as much as the Chinese. Fortunately, the day before Lord Elgin concluded his Treaty in Japan, the American representative, who had seduced him into the legalization-action, at the tariff negotiations after the Treaty of Tientsin, completed his. Mr. Reed had concluded his treaty the day before Lord Elgin. In that treaty opium was prohibited, and an engagement came to by the Americans that they would not introduce opium into Japan.

204. Do you know the Chinese labourers very well; do you think there is any danger that, if opium was

prohibited, the Chinese would follow the Japanese example, and drink a great deal of liquor instead?—I cannot tell; I do not think they would, so long as they could get plenty of tea.

205. You know the Chinese officials very well, you know their habits and their character; do you think here is any probability of the Chinese Government ever stopping the growth of opium in China? Do you think it is probable?—Well, who can tell about the future? I hope, and I fear. I may be allowed, my Lord, to just refer in connection with this to a kindred subject. The question has often been put to me whether I thought that the opium smuggling had made us accountable for our first opium war; and I would like to give my view about that. The war was occasioned by two factors; one was the intolerable insolence of the Chinese in refusing to have intercourse with the representatives of England on terms of equality, and the other was our habit of smuggling. England had this grievance against China, of its arrogant insolence; China had this grievance against England, of its persistent smuggling; and, as between the two, I say that the persistent smuggling of England was a greater crime against humanity and against God, than the abominable arrogance of the Chinese; and we had no right to call by violence upon our country to make the Chinese Government change its insolent ways—we had no right to do that, until we could stand before them and say that we had given up this persistent habit of smuggling. In reading Sir John Davis's "History of China," in his account of the troubles that broke out after the arrival of Lord Napier, to supersede the East India Company's official supercargoes in the superintendence of the trade, I find he says, "As soon as ever he (Lord Napier) arrived, the trade became free." The consequence was that nearly every—I do not say every—Englishman, but scores of Englishmen in that part of the world who could manage to muster enough to purchase a boat of their own, went into the smuggling trade, carried on their business not merely in the waters outside the port, but went also into the interior waters, until even the Chinese merchants and the superintendent there (Captain Elliot) began to get alarmed, and, after consultation with the English generally, Captain Elliot issued an edict to all these little smuggling parties, ordering them out of the inner water within three days, and he communicated to the Governor that he had done so, and offered him his assistance to suppress that abominable system of smuggling that was everywhere going on. Sir John Davis says that this was the only occasion on which the Canton Governor dispensed with the absurd practice of requiring the English superintendent to address the Mandarins, through the intervention of the Hong Kong merchants. He granted terms of equality on that occasion, so conscious was he of the virtue of the English superintendent in the offer which he had made to them.

206. (*Chairman*.) We may take it that we all regard that policy of the past with great regret, and that we accept the statement which was made on behalf of the late Government by Sir James Ferguson, that such a course of policy as that would never be permitted again; that I think is agreed?—I wish it were so, my Lord, that we all look back with shame and regret upon the past. I believe you have stated correctly, that the question which is before us now, is the present and is—Is the opium a thing that is doing good or doing evil?

207. You have very clearly told us, as the result of your long experience, and in your judgment, that opium does nothing but harm in China?—Nothing but harm; and therefore it is that I hailed the new departure which the Anti-Opium Society took in directing its operations specially to India, and proposing that the production of opium in India should be confined to what was necessary for medical purposes. The veil seemed to fall from my eyes, and I said to myself, "Now we have hit upon the right method; we strike at the evil in its very head; cut off, stop up the fountain of production in India, and the influence that goes out from us upon China will be for good and nothing but good!" And I myself have such confidence in the arrangements of Providence in the conduct of human affairs that I believe we should recover anything that we should lose, ten times.

208. (*Sir James Lyall*.) Would not that apply to the production of spirit, of rum, and whisky, and all those things that are produced in Europe, and are sent out to all sorts of countries? How do you draw the distinction? They do tremendous harm in India; at the

present day great harm is done by the importation of spirits—great harm is done to the Indians. What is the distinction?—I think better of spirits than you do, apparently, though I cannot say that I have ever seen my way clear to become a teetotaler; but two things that are bad will not make a third thing, that is worse, good. I have no reply to say, but “success to the teetotalers.”

209. (*Mr. Pease.*) You stated that your observation had been, that persons who became smokers gradually came more and more under the influence of the opium?—Yes.

210. If it is stated by other witnesses that men go on from 15 to 16 years consuming the same quantity and not coming more under the influence of opium, do you say that that is contrary to your experience?—I never knew such a case; I never knew a man go on so long without injury. I have said that if a man is well off, otherwise able to feed well, able to keep himself well clothed, he may indulge in opium much longer than a poor man, on whom it works its natural effects, and who cannot defend himself against them. But of course, there is a danger to every man who indulges at all in drinking, whether it be spirits, liquors, or even beer; the less he takes of them the better; but it does not follow that he will go to ruin as the poor opium smoker does in China.

211. (*Sir W. Roberts.*) In your travels in China, have you ever come to a community where opium smoking might be said to be generalised, that is to say, generalised in the same way that the drinking of alcoholic stimulants is in this country?—Well, no, not in my travels in China. Happily, I have not met with any community so thoroughly debauched as that. Some-

The witness withdrew.

Dr. MAXWELL called in and examined.

214. (*Chairman.*) I believe you are a master of arts and a doctor of medicine of Edinburgh?—Yes, my Lord.

215. And what is your present position?—My present position is secretary to the Medical Missionary Association in London.

216. And in earlier life what was your career?—From 1863 to 1885, excepting a long period of illness between 1874 and 1883, I was a medical missionary in the island of Formosa in South-Eastern China.

217. That long residence in Formosa put you into a position in which you could form a judgment as to the effects of the opium habit. Will you kindly tell us the conclusions to which you were brought?—I may first just state, my Lord, the kind of experience which as a medical missionary I was forced to have. I should say that every missionary whether medical or otherwise in China is forced to take note of the opium question, not only because he meets with opium victims, but because the rigid law of the Christian church in China is that no opium smoker shall, under any condition, be admitted to the church. He must form a judgment for himself of the grounds of that and approve it or otherwise. So that every missionary is involved, but especially a medical missionary, the moment he opens a dispensary, as I myself did in the seaport village of Takow in the island of Formosa in the year 1865. In the first four months of my dispensary practice there, out of 649 patients I think I had 247 who were opium smokers, and 109 of these came expressly to be cured of opium smoking, that is to ask my help for the cure of opium smoking. I took note of that, and three years later, or rather in the beginning of 1869, when I was permitted to return to the capital of Formosa, the city of Tai-wan-foo, a city of 150,000 or 200,000 inhabitants, and opened a hospital there, in the first five months of my work there, I had 250 opium patients, that is patients who came expressly seeking help to be delivered from the bondage of the opium habit. Now this is the experience of every medical missionary in China. In the north and in the west and in the south wherever a medical missionary is planted he is beset by great numbers of people, men especially, who are seeking to be cured of the opium habit, and I calculate that no less than 20,000 patients a year pass through the hands of the medical missionaries alone, seeking deliverance from the habit; that is altogether apart from those who go to missionaries who have opened opium refuges and who are able to help them by means of the opium refuge, shutting up the patients for a certain number of days, and altogether apart from the very large numbers who go to Chinese practitioners seeking help from them.

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times the condition does very much change; the Chinese population of Hong Kong has approached that. For instance, in 1844, the very year after Hong Kong—or, two years after Hong Kong—was ceded to us, an ordinance was passed by the Legislative Council, making Hong Kong the opium house for all China; and I think it was 10 opium houses which were at once licensed for the preparation of opium, and, often in the morning I have gone down from my own house on the hill, and walked along about a quarter of a mile of the Queen's Road where those houses were situated, and the air reeked with the effluvia of the boiling opium, and the greatest scandal very soon arose in connection with the system then adopted by the Hong Kong Government.

212. You suggested erroneously that sometimes even 20 per cent. of the population of China were opium smokers; that would be of the adults, I presume?—It may be so now, because, I believe, that through the home production the quantity of opium produced in China is perhaps five times that which comes from India. The inspector, Sir Robert Hart, made a calculation of the amount of opium imported from India, and how many people it would serve to afford smoking to, and I think it was only 1 per cent.; that is several years ago. But I should say now that in some places 20 per cent., but that upon the whole 10 per cent. of the population, some 40,000,000, are opium smokers.

213. Is there any evidence that there is any national degeneration of health in China?—No; but all our medical missions are well employed, and Dr. Dudgeon, at Peking, has made a register of applicants and opium victims with their trades and their various engagements, which enables him to determine the proportions of different pursuits that are suffering from the habit.

In almost every city in China, and in the large villages, there are shops where medicines are sold expressly for the cure of the opium habit, by the Chinese themselves. All that will show you how full is the experience, at least of the medical missionaries, in relation to the habit.

218. What is the class of people who seek medical help with reference to opium, and what are their motives for coming to seek for professional assistance?—The class of people is the working class; the small shopkeepers, coolies or labourers, ordinary artisans and the working class generally, the poorer class, not the wealthier class, these are the parties who come into our hands and it is upon them of course that the habit presses most severely, just by reason of their comparatively limited income.

219. Do you take it that the use of opium in a measurable per-centage is more prevalent among the poorer class than it is among the well-to-do class?—According to per-centage, I do not know. Of course, a vast number of the people in China belong to the comparatively poorer class, agriculturalists and working men, and it is amongst them that the missionaries have their chief labour. It is not amongst the wealthier class. But we know it as a fact that large numbers of the wealthier classes do take opium, but comparatively few of them come into our hands. You asked me a question which I have failed to answer, and that was as to the motives of those working people for seeking help. The motives were these: Some of them came because they had, in the first instance, begun to take opium for the pleasure which it gives. They had found that after a year or two years, the pleasure had entirely passed away, and that they were now under a condition in which they were without the pleasure of the habit, and were yet unable to give it up because of the difficulty, the pain of giving it up, and they came seeking help for that purpose. Others came who had been, in the first instance, recommended to take opium by Chinese doctors, or by their neighbours or friends for some complaints, such as dyspepsia or neuralgia, or something of that kind, and they found themselves, according to their own statement, worse off now that the habit was upon them than with the previous disease from which they had suffered. Others, again, came at the urgent solicitation of their parents or of their friends, who knew the tendency of the habit to grow worse and worse, and to land them, finally, into abject poverty or something like that. A few, I will say a few, came who were satisfied of the moral degradation

Rev. J. Legge.

8 Sept. 1892

Dr. Maxwell.

Dr. Maxwell.
8 Sept. 1893.

of the habit and who felt the moral degradation of it, and desired to be delivered from it on that account, and a very large number came because of the pressure of their financial condition. They found that the use of opium was absorbing so much of their daily wage that they were unable to sustain their families and themselves in anything like ordinary comfort. These were the general motives which brought those people to seek our help.

220. Can you, from your experience in Formosa, draw a contrast between the effects of the opium habit and the effects of tobacco smoking or of dram drinking?—In Formosa men and women alike smoke tobacco, and I think that that custom is pretty characteristic of the whole of the south of China. They all smoke tobacco, and during ten years' work in the island of Formosa I never had a patient who wanted to be rescued from the habit of tobacco smoking, nor did I ever hear it suggested that tobacco was a curse. Amongst ourselves there were, even amongst missionaries, some who used tobacco. It never crossed their minds for a moment that anything like church discipline should be exercised upon smokers of tobacco. On the other hand, the Chinese themselves have no hesitation in speaking of the opium habit as a curse and as a pest, and we, as missionaries, were not only for our own sakes compelled to take notice of Chinese opinion, but using our own judgment to recognise that it was practically a moral curse to many people in China. In that respect the gravity of opium smoking as compared with tobacco smoking is very manifest, not only in the judgment of the people, but also in its effects. I should say that the tobacco that is used in Formosa is a light tobacco, and when they would smoke they would not smoke so much at a time as we would, but they would smoke very frequently, though they never dream of anything like inability to give it up if they choose to give it up. They would not require to go to you for help to give it up, but the opium smoker is compelled to come to us for such help. Then with regard to the dram drinking, I think that the habit of spirit drinking is more common in South China than Professor Legge seemed to indicate, in what I heard him say a few moments ago. Certainly in Formosa there is a considerable amount of spirit made from the rice and that is used by the natives. I do not know that I have ever seen a drunken man on the streets. I have seen again and again men excited by liquor, and I am quite satisfied in connection with the use of opium and the opium habit the practice of liquor drinking is growing; that instead of its tending to diminish, it is tending to increase in China the habit of liquor drinking. At the same time, I never had a patient who came to me asking for help to be delivered from the curse of dram drinking, who felt it to be a curse, and amongst us, as missionaries, we never felt that we had any occasion to make that a matter of church discipline, as we had to do in the case of opium smokers. In these respects I think there is a very distinct comparison showing the superior gravity in the minds of the Chinese, as well as in the minds of those who go to work amongst them, of opium smoking, as compared with either tobacco smoking or dram drinking.

221. You have spoken of large numbers of persons coming to you for help to overcome the opium habit. Now were those seekers for help to any considerable extent persons who were only occasional consumers of the drug as distinct from habitual consumers?—They were all habitual consumers, and I think it is hardly right to speak of occasional consumers. We do not call a man an opium smoker who is not a habitual consumer, and except a number of merchants who know the danger of the drug and of becoming enslaved, and who, perhaps, in connection with their business will occasionally take a smoke with a customer knowing well the danger, but refusing to take it day by day, there are no parties whom you would speak of as occasional consumers. The ordinary use is habitual consumption, that is to say, daily consumption, once or twice or thrice a day. I am speaking of working men, and those who come to us are working men. They would be consuming day after day a mace, that is about 60 gr., or two mace, or even three mace. We reckon that between one and three mace a day was what would be called the minimum average of the habitual opium smoker, about say 70 gr. or 80 gr. in the course of the day. That would be a minimum average, for those who are under the habit of the drug.

222. What you call slaves to the drug?—Slaves to the drug quite as much as if they took an ounce

of the drug. If a man took the minimum average of the habitual opium smoker, I would say you could not distinguish the difference between him and the man who took an ounce of the drug. A mace or a mace and a half is quite sufficient to make a person come under the habit of the drug, so that he is a slave to the drug; and when I use the phrase "slave to the drug" the meaning is this, that if for any reason he desires to give it up as from financial considerations or from moral considerations, he finds himself face to face with a physical ordeal that is so severe that he cannot manage it.

223. Great suffering is involved?—Great suffering.

224. What is the nature of the suffering?—The nature of the suffering is this. If a man passes the time of his usual participation in the drug and does not receive it, does not get it, he begins as I have often seen in the case of Chinese teachers, to gape and yawn and to show a very large amount of lassitude, and if this is continued and he does not receive his regular dose, his eyes begin to run, his nose begins to run, he begins to have more or less of colicky pains in the bowels, his bones begin to ache, he is not able to pull himself together either physically or mentally, and he is unable to sleep, he is unable to do work, and he is thoroughly miserable, and if this is continued, as has happened again and again, both in India and China and in England, persons who are in the habit of using opium in that way and cannot get their usual supply have even killed themselves rather than endure the suffering. There was a case which occurred a few months ago in Birmingham where a man cut his throat. He was carried into the General Hospital in Birmingham, and when asked by the doctor there why it was that he had been so foolish as to commit suicide in this way, or at least to attempt suicide (he did ultimately die) his statement was that for three years he had been an opium-eater and had reached the length of something like 60 gr., that his funds had failed, and that his agony had become such, owing to the want of opium, that, rather than endure the continual suffering, he cut his throat. Now in India and in China we have not the least doubt that there are many such cases; but that is a general description of the kind of suffering through which they have to pass. Many have tried to cure themselves, but they have found themselves, as a rule at least, unable to do so, and they come to us for help in order to be liberated from this bondage.

225. Can you describe to us the physical evils which result from the use of opium?—I am speaking of what I myself have seen and of my own practice. Besides this imperious grip which is a very marked feature of the opium habit as contrasted with other habits, and which I think puts opium out of the ordinary category of luxuries, a grip which the partaker of it cannot overcome in his ordinary strength, I found in most of the patients who came to me seeking help that they were more or less emaciated. I will not call it extreme emaciation, but they were undoubtedly less in flesh than they ought to have been in the circumstances of their age and condition, and one of my rules with my opium patients was this (I had no wards in which I could secure them so that I could overlook the cure, and I was obliged to give them medicine, to take home with them to use; they had to pay for those medicines in order to be prevented from simply playing upon the doctor), I warned them that if in a fortnight or three weeks "you don't begin to put on flesh I know you are deceiving me, and I will refuse to give you any further medicine." I think we may take it that amongst the working men, in very large numbers at least, emaciation is one of the characteristics of the opium habit. It has been put down by some missionaries, notably Dr. Pritchard, of Pekin, that the average degree of leanness caused by the habit amongst working men patients is something like 20 lbs., that is they were about 20 lbs. less than the ordinary weight of men of their age, owing to their connection with the habit. Then besides physical emaciation the opium patient suffers from a susceptibility to intercurrent diseases, such as ordinary patients are not equally liable to, at least. In tropical countries like South China we have fevers coming oftentimes epidemically as well as endemic fevers. We have dysentery and we have cholera, and our experience is that opium patients are susceptible to those diseases and fall under them; I mean succumb to them in a very extraordinary degree above the way in which other persons would succumb to them. Their vitality is very much lessened,

and we see the same feature of weakened vitality in the liability of many of these opium smokers to carbuncles of a very severe kind, and to ulcers and to other things of that kind indicating more or less weakened vitality, and we have also an opium diarrhoea to which they are subject. Of course I should say first that the ordinary opium smoker is liable to a degree of constipation which is very abnormal. He will not have his bowels moved perhaps once in five or six days, sometimes even as seldom as twice in a month. But along with that he is liable from time to time to attacks of severe diarrhoea, and many opium patients are cut off by diarrhoea. Of course when a patient is attacked by diarrhoea opium is our sheet anchor and often with dysentery also; but in the case of opium patients it is not of the slightest use. Opium patients are in that way excluded from any benefit that the ordinary patient suffering from diarrhoea or dysentery might derive from the drug. That is one of the ways in which a large number of our opium patients die, from diarrhoea or dysentery, and those are the physical evils which I think we see most manifest in them, many things betokening a weakened vitality. And if you ask whether opium patients die, I would admit that we do not see many opium patients dying directly from the use of opium unless from starvation. There are many that die from starvation in connection with opium. We see them in the streets in the great cities of China lying dying there, not able to work; and they are not able to get food, and they will put out their hands craving for opium, and if you go round next day perhaps you will find the body lying dead in the street. Many die in that way, but most patients dying through opium die through their liability to diseases coming upon them in their weakened vital condition, and so carrying them off.

226. Then as to the moral evil?—As to the moral evils of the opium smoker, I should explain that many of the young men are tempted to begin to smoke opium because of their knowledge, communicated to them by others, of the way in which it ministers to sensuality. There is no question of that fact, that it does minister to sensuality; and they begin very largely in order to have what they think will be very much sensual enjoyment. That is a moral degradation. Then we find that with the habitual opium smoker there is in some way or other a tendency to falsehood. I do not know how to explain it, but it is the case; with habitual drunkards the same thing is the case, the distinction between truth and falsehood becomes very much weakened, and we find it also with the habitual opium smoker, and the tendency to deceit is more marked in them. Then the habit of indolence is one of the features which we should speak of as one of the moral evils. An opium smoker, if he consumes a mace of opium of the prepared extract, must spend at least an hour over it, and if he is consuming, say, at three smokes in the day, at least three mace of opium in the day, he will spend an hour in the morning, an hour in the middle of the day, and an hour in the evening over this habit. There is thus a large amount of time consumed. And it is not simply the time that is consumed then, but before he settles down to his opium he has already come under the lassitude of the want of his opium, and he is not as fit for working for some time preceding his getting his dose as he would be if he were not an opium smoker. Then perhaps the worst evil, taking the community all round, is the terrible selfishness which a habit having such a grip upon the patient induces upon him. He must have his craving satisfied, and the result is (and we must sympathise with it, he cannot help it, it is the result of the physical craving) because of the intensity of this physical craving he sets at nought his family claims, his wife's claims upon him, his children's claims upon him, claims of respectability; all those have to go to the wall before the imperious craving under which he has given way. We have no hesitation as missionaries in looking upon the opium habit, in the simplest forms, as one which we dare not trifle with. The native Christian Church would not suffer us to admit the opium smokers if we ourselves were inclined to admit them. They would say, "We as heathens" looked upon it as immoral," and surely as Christians could not do less.

227. What have you to say to us as to the social evils?—I have mentioned already the social evil in connection with the selfishness, but there is another feature of it. Only this week I had a letter from one of my colleagues in Tai-wan-foo—he has been there for 14 years—in which he speaks of a conversation which he had held with a chemist in the city of Tai-wan-foo, a chemist who

20 years ago was my own assistant in hospital. I should say he himself had been an opium smoker, knew what opium smoking was, and was saved from the opium vice by the help I was able to render him. He later on had set up as a chemist, and had a very large amount of commerce as a chemist in the city, and knew pretty intimately the people of the city, both the well-to-do and others, and in this conversation this Chinaman expressed to Mr. Barclay, my colleague, his concern at the large number of wealthy families who had, since he himself had set up in business, gone to the wall, and he had no hesitation in putting it down to the abuse of opium. When other Chinese, who were referred to in connection with this conversation, were asked their opinion on the subject, why it was that so many of the wealthy families in Tai-wan-foo had gone down, they also said it was from opium. That is one manifestation of the social effect upon them. I have seen the same described by Archdeacon Wolfe, of Foochow; I have seen mention made by him of villages where the opium habit was peculiarly prevalent, and the description of which, for dirt and for poverty, exceeded the description of any ordinary village, in relation to these things, in China. And I remember one of the missionaries in Manchuria describing the city, Hai-chung, I think it was, not very far from Mookden, in which the general opinion expressed by the people was that their city had rapidly gone down through the large amount of opium consumed by them.

228. It has been contended that opium is a very necessary remedy in countries which are much subjected to malaria. Now, what is your view on that?—I have a very decided view on that, my Lord. Formosa is perhaps the most malarious district in South China, all my patients were more or less under the influence of malarious disease. As missionaries it is the chief ailment under which we ourselves come, some form of malarious disease, and we look upon all the Chinese there as being more or less saturated with malarial poison. I could not treat diseases of the kidneys, and oftentimes of the eyes, with any hope of success until I had put the patient under the influence of quinine, so that other remedies might be able to work; the remedies would not take effect until I had got these patients under the influence of quinine. I mention that to show how prevalent malaria is in Formosa. Well, during 10 years in Formosa I never once heard it mentioned by a Chinaman or suggested by a Chinaman that opium was ever taken as a prophylactic for fever. They would say they had taken it for malarial pains, to soothe their lassitude, or the pains produced by malaria, but they never, and I am certain I should have heard of it from someone or other, said that it was reckoned by them to be a prophylactic for fever. Then, again, among my patients I had a very large number of opium-smoking patients, who were suffering from fever, and whom I had to treat with quinine just as I treated other patients, and who recovered from their fever under the influence of quinine. Some patients died in the hospital. I remember one especially who came to me in the last stage of fever. I saw he was dying when he came into the hospital, but upon that poor fellow, even though he was in the act of death, the craving for opium came to such an extent that I was obliged to break my usual rule of forbidding opium in the hospital and procure an opium pipe for him and opium in order to soothe his last moments. I came to the conclusion, therefore, that there was nothing like a prophylactic in the use of opium, so far as fever is concerned, in malarial disease. Then all my brethren in China, the medical missionaries, would have no hesitation in confirming what I say when I aver that in Shen-si and in Shan-si, two of the provinces of China which are on a very high altitude, something like 3,000 or 4,000 feet above the level of the sea, and where malaria is not to be found at all, they have a much greater prevalence of the opium habit than in the malarial provinces of South China. This is well known to all who are labouring in China, and we never dream in China of attaching any thought to opium as a prophylactic for fever. And while speaking of that I think it should be kept in mind by the members of the Commission that in Burmah, in the valley of the Irrawaddy, a notoriously malarious region, Akyab, one of the chief cities of Arakan, is a notoriously malarious town. Yet it was at Akyab that the respectable members of the community entreated Sir Charles Aitchison to take away opium, saying that they would pay an increased tax if only he would take away opium. If they had felt that opium was of any value to them in saving them from

Dr. Maxwell.

8 Sept. 1893.

Dr. Marwell.
8 Sept. 1893.

fever, and there is a great deal of fever and dysentery in that region, they would scarcely, I think, have done that, and I cannot see how our Government could be at liberty to take away from a people that which is likely to serve as a great prophylactic for fever, simply to please the people in the matter, as if it were a thing of no importance. I think we may take it for granted that there is nothing to be said for opium as a prophylactic for fever.

229. Then with reference to the consumption of Indian opium in China, what do you say about that?—In Formosa no opium is grown; the opium which is there is Indian opium; the opium used by the coolies is Indian opium; whether used by wealthy people or the poorer people it was all Indian opium. When I was in difficulties myself for opium to use for medicine, if my own stock of Smyrna opium was run out—opium I got from this country—I would purchase a quantity of Indian opium, and found it quite as effectual for my purpose as the Smyrna opium, at least it served my purpose either for pill-making or any other opium use that I desired. I think it is unfair, historically, to speak of Indian opium in China as being, when compared with other opium, what champagne is to other wines, for this reason that at no very far back date, about 1863 say or 1864, Indian opium was the only opium in the market in China. I hold in my hand an extract from the China Yellow Book of 1887. The China Yellow Book is the book issued by Sir Robert Hart, as the Commissioner of Imperial Customs. And in the issue of 1887 he draws a comparison between 1863 and 1887 to show the rapid spread of native opium over China. For example, we read with regard to New-chwang, which is the port of Manchuria, in the extreme north of China. In 1863 the record of the Commissioner of Customs was: "No native opium in use at this port during the year '1863.'" In 1887: "Native opium is both grown and consumed in this province. Of smokers who indulge in the vice in their own houses 90 per cent. smoke the native drug." Again: "Opium is very extensively grown in this province" (Manchuria). And again: "The present annual production of the three Eastern provinces is estimated at 8,000 piculs," a picul being 133 lbs. So that between 1863 and 1887 you have a very marked comparison between the use of native opium and the use of Indian opium. In 1863 it was all Indian opium.

230. (Sir James Lyall.) That is in the South?—In the extreme south of Manchuria.

231. You do not mean to say that there was no opium in the interior of China in 1863?—I am speaking just now of one province, Manchuria.

232. The sea coast?—The sea coast, and leading up to Kirin as far north as Kirin. In 1864, according to the Commissioner of Customs' report, "native opium in Tientsin is not widely used." But in 1887 "Production of native opium in North China is very large, and for every chest of foreign opium imported, at least nine chests of native opium are consumed." I draw attention to this to show that the rapid growth of opium in China belongs to the last 30 years, that though known in the interior of China before that, between 1840 and 1860 when the Tientsin Treaty was formed, the native opium was not widely used. There had been a very decided increase in such provinces as Sichuen and Yun-nan and Kwei-chow, but still the growth was comparatively limited. The great increase begins from the date about 1863, until now it is so large. Che-foo in 1864; "the consumption of native opium at this port during the past year has been so small that it may be returned at nil. It is brought here from Shen-si, Shan-si, and Yun-nan." "Native opium is known at Che-foo in 1887. It is extensively produced in this province," that is the province of Shan-tung. And again: "In seven years the annual importation of foreign opium has fallen off by 3,463 piculs." "The boys, when they learn to smoke use the native opium. Opium smoking is not decreasing; it is increasing. For each picul of foreign opium which is consumed in the Che-foo supplied districts there are about 10 piculs of native consumed." And so over Hankow, Kiu-kiang, Chin-kiang, Shanghai, and Ning-po, all leading places. What I want to draw attention to is this, that the Indian opium has been excluded, not because of its price so much, or that it was of a fine quality, but because native opium has only come to the front in these last 30 years, and it is the rapid growth of native opium that has diminished the consumption of Indian opium so very much in various parts in China.

233. (Chairman.) Would you draw the inference that that tendency is likely to continue?—I do think so.

234. That the Indian supply will become less and less important?—That the Indian supply is likely to become less and less as the native opium is more and more cultivated.

235. India, so far as it seeks a market in China, is likely to find less and less a good market, I mean to say that the consumption will be met by local supplies?—I do believe so, that it will be met by local supplies. In any case, I think it is hardly a fair comparison, historically, to speak of Indian opium as being like champagne amongst other wines, because that leads the public generally to think that native opium has been existing for a very lengthened period of time, and that Indian opium has always taken this position as being a sort of superior opium; whereas the history of the traffic is that Indian opium is being driven out by the rapid growth of the native opium.

236. What is the view held by opium smokers and by non-opium smokers in China as to the morale of the opium habit?—With regard to opium smokers themselves, there are very few who will not acknowledge it to be a vice of which they are heartily sorry, and which they grieve over themselves. That does not imply that they will face the giving of it up, but I am quite satisfied that if you were to appeal in any part of China to an habitual opium smoker, he would say "I am under the power of a vicious habit." And for non-opium smokers there is no question at all as to their opinion. It is looked upon as a vice and nothing but a vice, and those who take to it are considered to be on the high road to ruin. To give you just one most recent instance, I had in my house, about three months ago, a heathen China woman.

237. (Mr. Pease.) In London?—In London. She was from Formosa, that was the reason I saw her at my house, and I asked her the question, "Do any of your relatives smoke opium?" She said, "No," most emphatically. "Does your stepson not smoke opium?" (I knew she had a stepson). She said "No. I knew that once or twice he had been tempted by friends to take it for pleasure, (thit-thô, as we say) and I told him at once" (he was a married man, living in her house), "that if he put his mouth to an opium pipe, he would march out of my house immediately." This was a poor woman, yet showing what the view of the non-opium smoker is with regard to the habit coming upon relatives.

238. (Chairman.) In what respect does the Indian opium traffic tend to hinder the work of the Christian missionary in China?—In two ways. First, because it has raised up against us a great wall of prejudice amongst the educated community. It is unquestionably clear to all who have lived long in China that the educated portion of the community, who know what our relations to Indian opium and the object of the Chinese wars were, look upon us as the destroyers of their country, and openly say so. That is one very great reason why we send so few goods to them and that we have not sent so varied and large an amount of goods as we ought to have. But then there is the other reason. Suppose that there are no fewer than 20,000,000 or 25,000,000 of opium smokers in China, we look upon every opium smoker as being further away from susceptibility, if I may use the word, to listen to an appeal to conscience or to listen to the appeals of the Gospel, as compared with any other people in China.

239. (Mr. Pease.) Do you limit the number in China to the number you mentioned?—25,000,000. Then we feel that looking upon it as an immoral habit we are put in a very gravely false position, that our Government in India should be seeking year by year to increase the number of opium smokers as it does by this trade, not directly so far as the Government is concerned, but by the trade itself the action of the Indian Government is to multiply opium smokers, whilst we are compelled as missionaries to occupy the position of excluding everyone who comes under the power of that habit from the Christian church. You will recognise what I mean and the difficult position in which we are placed as missionaries.

240. Well now then, turning to the opinion of the medical profession as to the habitual use of opium, what would your view be of the state of opinion in this country?—If I were to appeal as I appealed to-day on my way to the Commission, to a medical practitioner

whom I happened to meet, if I were to appeal to any medical practitioner in this country, whether he would look upon it with an easy mind, if any relative of his were to take to the practice of laudanum drinking or of morphia injecting I think I would get the answer which I got from him, "Certainly not." We medical practitioners should regard it with very deep concern indeed, I am quite satisfied of that, if any relative or friend, or patient were coming under what we call the opium habit in the way of taking to the immoderate use of laudanum or to the habit of injecting morphia under the skin. To show just what we think of it as medical men in this country, would you allow me to read one sentence from our pharmacological text book, perhaps the leading one in this country, the one by Dr. Lauder Brunton. "When opium is first taken its action is to stimulate and afterwards depress. To remove this depression the individual takes another dose; the habit of taking the drug thus becomes established, the nervous system suffers, the mental powers become enfeebled, the moral faculties perverted, and there is inability to distinguish between truth and falsehood." This is what we have in our leading text-book on pharmacology in this country. Then we have had at least two pronouncements in this country—they are very distinct pronouncements—on the subject of the habitual use of opium in any form. The first of these is the testimony of the late Sir Benjamin Brodie and of 24 distinguished medical practitioners of London. It was given in the year 1843 when Lord Ashley brought forward his first motion against the opium monopoly. His motion was that the opium monopoly should cease and active steps should be taken to bring the growth of the poppy in India to an end, so far at least as went beyond medical purposes. This is what Sir Benjamin Brodie testified to: "How ever valuable opium may be when employed as an article of medicine, it is impossible for anyone who is acquainted with the subject to doubt that the habitual use of it is productive of the most pernicious consequences, destroying the healthy action of the digestive organs, weakening the powers of the mind as well as the body, and rendering the individual who indulges himself in it a worse than useless member of society. I cannot but regard those who promote the use of opium as an article of luxury as inflicting a most serious injury on the human race." This was signed by Sir Benjamin Brodie and by 24 of the most distinguished members of the Faculty in London, such as Dr. R. Bright, F.R.S.; Dr. P. Latham; Dr. Chambers, F.R.S.; Mr. R. Liston, F.R.S.; Dr. Ferguson, F.R.S.; Sir C. Locock, Bart.; Sir J. Forbes, F.R.S.; Dr. McLeod; Dr. Glendinning, F.R.S.; Mr. J. C. Moore; Dr. Gregory; Dr. Paris, F.R.S.; Sir H. Halford, Bart., F.R.S.; Dr. R. T. Thomson; Dr. Hodgkin, F.R.S.; Mr. F. Tyrrell; Mr. Caesar Hawkins, F.R.S.; Dr. B. Travers, F.R.S.; Sir H. Holland, Bart., F.R.S.; Dr. J. T. Watson, F.R.S.; Mr. Ashton Key; Mr. Antony White; Dr. James Johnston; Dr. J. C. B. Williams, F.R.S. That is one of the testimonies from this country. Then here is another, my Lord, which I had a hand in securing myself, a declaration of opinion by over 5,000 medical men of Great Britain and Ireland, in answer to an appeal to the profession which was issued in December 1891. There are over 5,000 signatures to this of members of the profession in Great Britain and Ireland, and amongst these 5,000 there are 10 Fellows of the Royal Society; 14 teachers of materia medica; the three representatives of the profession in England who sit on the General Medical Council; the president of the Royal College of Physicians of Scotland; 23 members of the profession who have practised in India, four of whom have been professors in medical colleges in India, and one a late reporter on economic products to the Government of India; 12 members of the profession who have practised in China; 21 heads of asylums; four natives of India. These I have picked out of the midst of them, and I do not know that in the history of the profession on any question of social or moral interest there ever has been a paper which has been signed by such a vast number of my professional brethren as this paper against the opium traffic. What they declare in this declaration of opinion is as follows:—"We, the undersigned members of the medical profession, are of opinion:—First: That the habit of opium smoking or of opium eating is morally and physically debasing; Second: That the unrestrained sale of such a drug as opium is immediately associated with many and grave dangers to the well being of the people of India; Third: That the drug, opium, ought in India, as in England, to be classed

"and sold as a poison, and be purchaseable from chemists only; Fourth: That the Government of India should prohibit the growth of the poppy and the manufacture and sale of opium, except as required for medical purposes."

Dr. Maxwell.

8 Sept. 1893.

241. Then as to the opinion of the medical profession in India?—I have with me here a petition 'to the Honourable the Commons of Great Britain and Ireland in Parliament assembled. The petition of the undermentioned members of the medical profession in the Bombay Presidency, India,' going over what I have stated to you myself as some of the characteristics affecting opium smokers and opium eaters, and signed by 49 members of the profession, all natives, living apparently in the city of Bombay. Some of them have taken their degrees in this country, some of them are graduates of the Grant Medical College of Bombay, and others are licentiates of medicine and surgery, and one or two are licentiates of medicine only; but these are all medical men and native medical men in that one city, and I think if so many native practitioners in a single city would put their names to a petition of this kind it shows a very large amount of feeling in India itself in regard to this subject.

242. (*Sir W. Roberts.*) Is that petition the same as the other one?—No, sir.

243. (*Chairman.*) Have you anything to say as to medical opinion in China?—Attached to the other one signed by over 5,000 of the profession in this country, you will find on the second last page the opinion of four men who represent fields of labour in North, South, and Central China. I have taken these and put them separately, my Lord, because it is the only way in which I could bring before you the opinions of the medical profession in China. There are now in China about 110 medical men, including perhaps about 20 medical women, all of them fully qualified, practising as medical missionaries in China.

244. (*Mr. Pease.*) Europeans?—Europeans and Americans. All of these are of one mind, I have not the slightest hesitation in saying, with the four who happened to be in this country at the time and to whom I sent the appeal as was sent to the other medical practitioners in this country. I sent round the appeal to all the members of the profession in this country. They write as follows: "We, the undersigned medical missionaries, about to return to our fields of labour in different parts of China, cordially agree with the declaration of opinion as above." That is with regard to the four points that I have read. "Further, we believe that we express the unanimous opinion of the medical missionaries labouring in China, now numbering about 110, when we add that it is difficult to speak too strongly of the physical and moral evil, and of the social misery which is being wrought in China by the wide spread and increasing indulgence in the use of opium." One of these gentlemen belongs to the province of Canton, another hails from the Che-Kiang province, and another comes from the most northern part, Kirin in Manchuria. This is the testimony of the medical profession which comes closest to the Chinese in the way of seeing them in their daily life, speaking the language and having continual intercourse with them.

245. (*Sir W. Roberts.*) The signatories of the petition from Bombay are almost entirely natives?—Natives.

246. (*Chairman.*) There is one more point on which you wish to make a statement, and perhaps you could make it briefly and in answer to one question; what is the view that you wish to present to us with reference to the freedom of China for taking action to exclude opium under treaties?—I want to say very definitely, my Lord, that I hold that China is not free, and that I think such statements as those of Sir James Fergusson and also of the late Under-Secretary for India, Mr. Curzon, that China, if it pleased, could be in the same position as Japan—that China, to-morrow, could issue an edict prohibiting opium—are quite inconsistent with what I think most people understand by treaty obligations. At the present time China is bound to us in England.

247. Those gentlemen of whom we speak were the official representatives of the Foreign Office speaking in their official position and on their official responsibility in the House of Commons?—Well, I speak from the point of view of China. I quite admit with Sir James Fergusson that anything like a direct war on the ground of opium would, in the present feeling in

To Maxwell.

8 Sept. 1893.

this country, be impossible; but that does not mean that China is free. China is free, if you like, to do what Russia did in the matter of the Black Sea, to denounce the Treaty and take the risks; but that is very different from saying that China is free, and China is not Russia.

248. These are matters all outside of the purview of the Commission, purely inquiring into the opium question. I mean, we cannot help allowing our minds to engage themselves in some speculation as to the political position, but after all, it is a matter of speculation. But I suppose that you would agree with me that a declaration of war on our part against China, if China took the step of denouncing these treaties, would be received with great resentment by public feeling in this country?—I quite agree.

249. (*Sir James Lyall.*) It would not be necessary to denounce the treaty at all, I understand?—China is bound to us just now.

250. I understand all the authorities said it is not at all necessary to denounce the treaty?—But we have the treaty.

251. Under the Che-foo Convention they can simply give notice?—I have the terms of the Che-foo Convention in my pocket, sir.

252 and 253. (*Chairman.*) Will you make your statement of your view shortly to the Commission. I, as chairman, will take care that the matter is referred to the Foreign Office?—As I understand, at present China is bound to us by the Che-foo Agreement of 1885 or 1886; and according to the Che-foo Agreement, as I read it here, "in the event of the termination of the present additional article, the arrangement with regard to opium now in force under the regulations attached to the treaty of Tien-tsin shall revive." So far from China being free, if she choose, by giving notice, to withdraw from the Che-foo Convention, all that she could do would be to come under the power of the Tientsin Treaty, which is a very much worse position for her than the present position under which she is under the terms of the Che-foo article; and I do not think any one can read the history of the negotiations which ended in 1885, in the signing of the Che-foo article, without recognising that China did not get what she expected to get, and what she claimed in the first instance when that Convention was entered upon by Sir Thomas Wade with her in the year 1876. According to the original design, what Sir Thomas Wade agreed to move his Government to secure for China was that all opium coming into China should pass into bond, and that the import duty should not be paid until a purchaser should be found, and that then the Likin duty, or the local taxation, should be paid at the same time. This was what Sir Thomas Wade said he would move our Government to give to China in return for what she did for us in the way of commercial concessions when the Che-foo Convention was entered upon. If she had got that, which I think was a fair claim, we would say at least it would have been fair, the right to have opium brought into bond and to have the local taxation paid by the purchaser when it was taken out of bond, it would have been all right. The Indian Government refused to agree to those terms because as it was alleged the Chinese Government could at once raise the local taxation to what would be a prohibitory point upon Indian opium. The local taxation was in its own hand and if it could secure by the putting of opium into bond that there should be no smuggling, and there could not be any smuggling after that, then it would be possible by raising the local taxation to exclude Indian opium, and the Chinese made no secret that that was within their view. The Indian Government refused to enter upon any such arrangement, and the negotiations went on from 1877 till 1885 before any settlement could be reached, and the final settlement that was reached was the commutation of the local taxation making it equal all over the country, but making it payable at the time when the import duty, and amounting to 80 additional taels. But that was not what the Chinese first proposed themselves. When negotiations were first entered upon the Viceroy Tso asked for 120 taels; and when that was refused by Great Britain it was on the ground that that would make it prohibitory to Indian opium, and the Viceroy said, "Yes, and that is what we should like to have it in our power to do." Finally Li Hung Chang, the present Viceroy of Chili-li, came down to 80 taels. But it took years before our Government agreed to the 80 taels. China did not get her full demand. She

got what she demanded when she put her foot down and said, "We will not go lower." She got that. But we cannot look upon that as reaching the full claim of China. China is not free to take action unless England takes action with her.

254. (*Sir James Lyall.*) That is quite contrary to what has been said in Parliament?—Quite contrary. I admit that it is quite contrary. But I am quite satisfied of my position.

255. Then you think nobody in the House knew it?—I think that I can only state what I believe to be correct.

256. All you can ask the Commission to do is to make an inquiry at the Foreign Office?—Most surely.

257. (*Sir William Roberts.*) I was very much struck with your statement that no special organic disease is found after death in the opium smoker—anything like cirrhosis after spirit drinking or the numerous other things?—You should remember that we have no means in China, of pathological examinations; and my own conviction is that when the time comes that we shall have that, it will be found that we have more organic disease than is yet known.

258 and 259. Did you form any opinion of the proportion of opium smokers—I mean systematic opium smokers—to the rest of the population in Formosa?—In the city of Tai-wan-foo we considered that at least one-third of the adult male population were opium smokers.

260. Had any change taken place during your experience in the smoking of opium—I mean had it decreased much or increased much?—I should say it had steadily increased and is increasing still.

261. Was there any possibility of getting facts as to the state of the public health in Formosa?—Only by such inquiries as we ourselves could make through Chinese Christians and others; there are no statistics that would give us any such results.

262. Have you drawn a distinction in your mind between opium smoking and opium eating?—I have. I incline to think that so far as the evil goes that opium eating will be found in the long run—I know that I am on a little difficult ground—but I believe that opium eating is more difficult to cure than even opium smoking.

263. Have you formed any opinion as to whether the effect of opium—the total effect, in every way, physical and moral, varies much with the race?—I do believe that the Chinese, as a race, bear opium better than the Burmese. But it is a comparative quantity. I have no hesitation in agreeing with Dr. Legge that in China opium is an evil, and only an evil.

264. (*Sir James Lyall.*) You mentioned the effect in hindering—there was some effect in hindering—the spread of Christianity, owing to the prejudice against the English from the action of India with the opium trade in China. Well, are you aware that practically the Government of India's action as to the export of opium from India amounts practically to this—that it arranges that no opium shall go out of India unless it has paid in the first place a very heavy duty?—I am quite aware of it.

265. So that it immensely raises the price before it can get out of India, is the general result of its action?—Yes.

266. For instance, with regard to the English export trade of spirits, it goes out absolutely free of all duty?—But I remember also that in India the opium trade is a Government monopoly, and that all the money goes into the Indian Treasury.

267. The duty does?—The duty does. The Government is the merchant.

268. But its action is not to allow it to go out until it has paid a very oppressive duty?—That I know.

269. Whereas spirits, for instance, from England go out to Africa, to India, to other places, as I understand, free of duty, that is they are in bond; they pass out in bond; there is no duty on them at all. Why is it and where is it fair that the one thing should be supposed to create such a prejudice as to hinder the spread of Christianity, while the other thing has not that effect at all?—The prejudice is caused by the wars.

270. The wars themselves?—You see there were two wars.

271. I think we all agree in deploring the wars?—Well, but the prejudice has arisen from that—the prejudice against us.

272. At present it would not be fair—at least judging from that comparison—to look with prejudice upon opium, and not to look with prejudice upon the much worse case, from my point of view, of spirits?—If you ask my personal opinion, I would say there may be a difference. I do not look upon opium as I look upon spirits. Opium and spirits are two different things.

273. You think that in Formosa the injury done to the men who smoke is much worse than the injury done to those who drink spirits?—In this sense, that it is far more deeply seated; and there is no moderation. We here in this country would never dream of allowing our children to take opium as they take beer. We should not for a moment think of such a thing.

274. Do they in Formosa allow the children to take opium?—They do not allow them. But many children learn pretty young; the thing is all round them, and they can easily get at it. There is one point I must not forget, and that is the immensity of suicides in China. That is one of the great evils associated with the traffic, and I think it has hardly been dealt with in India as it should have been. There has not been sufficient inquiry made into it. Only one medical man has written regarding his experience of the number of opium suicides in a single district in India.—Dr. MacReddie, of Hardoi. Out of 198 suicides in three years with which he had to deal no fewer than 98 were from opium, and he says it was because the people could put their hand on it so easily, and excitable people not having the restraints of Christian civilization upon them, they could swallow it at once.

275. You drew a distinction; and you said, "Yes, it is the Government of India which derives that revenue, that duty, you know"?—Yes.

276. You know a good deal of evil is said to be produced by the exportation of spirits from England to countries in Africa, India, and other places, would you yourself think the Government did any harm if it imposed a duty upon that export? You hold the Indian Government as it were, guilty, because it takes a duty on opium, a very heavy duty, a crushing duty, you say, on the opium that goes out to China. Therefore, I suppose you would disapprove of the Government of

England putting a duty, whereas it puts no duty, upon the spirit which is exported to other countries?—Not at all; I should say the English Government, in dealing with the West Coast of Africa, ought to stop it altogether. I have no hesitation in saying so.

277. I mean you argue as if the Indian Government's putting a duty on it, and taking it for revenue, was a bad thing?—No, I did not mean it in that sense.

278. So far it is a good thing?—So far it is a good thing.

279. (*Chairman.*) It is so far a check?—Yes, so far. The Indian Government being in itself a monopolist, is the head of the concern: and we think of the Indian Government in connection with it, and say it is responsible.

280. (*Sir James Lyall.*) It is a monopolist in the way of manufacturing no doubt, but in the other part of India, in the Punjab, it is entirely the imposer of another duty, which is oppressive, on native, Malwa, opium, that is on native state opium it has only imposed a duty?—I have not touched on India at all.

281. (*Mr Pease.*) You alluded to your own use of Smyrna opium in Formosa; why is the Smyrna opium not used by the natives instead of the Indian opium?—There is a little Persian opium exported and brought into China.

282. Is it the cost of production or the duty that makes it too expensive?—It belongs to its history rather.

283. Is it more expensive than Smyrna opium?—I do not know that it would be; I could not say.

284. You hardly know why it is not used in preference to the Indian opium?—It has never been; there has been no special attempt to export it to China, to bring it into the market there; only some 4,000 or 5,000 piculs of Persian opium yearly are now brought into China.

285. The price is very much the same?—Very much the same.

286. (*Sir James Lyall.*) Rather cheaper?—Rather cheaper, yes.

(The witness withdrew.)

Adjourned till to-morrow at 11 a.m.

At the House of Lords, Westminster, S.W.

SECOND DAY.

Saturday, 9th September 1893.

PRESENT:

THE RIGHT HONOURABLE LORD BRASSEY, K.C.B. (CHAIRMAN, PRESIDING).

SIR JAMES B. LYALL, G.C.I.E.
SIR WILLIAM ROBERTS, M.D.
MR. R. G. C. MOWBRAY, M.P.

MR. ARTHUR PEASE.

SIR CHARLES E. BERNARD, K.C.S.I.,
Acting Secretary.

The Reverend JOSEPH SAMUEL ADAMS, Kihwa, China, called in and examined.

287. (*Chairman.*) I believe that you belong to the American Baptist Mission?—I do, my Lord. I belong to an American Mission, but I am an Englishman by birth and education.

288. And in what part of China has your field of labour been situated?—For 13 years I have been labouring in the Valley of the River Yangtse, and the last 10 years of the 13 in the province of Cheh-kiang, and the city of Kihwa.

289. You are now home on leave?—Yes, for a short holiday.

290. Well, upon what points are you prepared to give evidence?—On two main points. The first is the condition of Upper Burmah, before the annexation; and also the broad facts of the injury inflicted upon the Chinese, and the condition of public opinion among

them. I may say that for four years before going to China I was living in the Upper Burmah, from 1874 to 1879.

291-2. Perhaps you might at this stage inform us what was the date when you originally went out to the East?—I went out to the East in 1875, as a missionary to the Chinese in Western Yun-nan, and our object in going to Burmah was to cross the Kachin Hills into China from the westward; but after four years' waiting, and learning the Chinese language, the Government of India prohibited our passing across the frontiers; therefore I went round by sea to China, where I have been for the last 13 years.

293. Can you give us any observations formed during that residence in Upper Burmah, with reference to the question which has been entrusted to the consideration

Rev.
J. S. Adams.
9 Sept. 1893.

of this Commission?—From personal observation I can testify, my Lord, that the Burmese authorities were opposed to the use of opium among their own people; the prohibition was very strongly enforced both as regards opium and liquor.

294. Can you give us the reasons which, in your judgment, actuated the Burmese authorities and led to their decision to prohibit the use of opium?—From conversations that I had repeatedly with Burmese elders, with the Governor of Bhamo, and with the Buddhist Archbishop, I learned that the principal reason was that the people themselves were so weak in the face of such temptations as those offered by opium and liquor, and also that the Buddhist law prohibited the use of intoxicants to the people of the Buddhist faith; and there were also ancient laws of the Kingdom of Ava which forbade the same thing.

295. Can you give us your impressions as to the effect of the use of opium upon the people with whom you were brought into contact in Burmah, whether Chinese or the Burmese?—Of the four races, I found in Upper Burmah Kachyins, Shans, Burmans, and Chinese. The Burmese were the more decidedly susceptible to the influence of the drug undoubtedly. The Chinese seemed to resist the influence of it more than even the Hill men, but in all cases where the habit was once formed the emaciation of the consumer and the deterioration of his moral character alike ensued.

296. Did you come to the conclusion that when once the habit of taking opium, in however small a quantity, had been contracted, there was an irresistible tendency to increase the indulgence until it reached a point at which it was necessarily pernicious?—Yes; I have found this from a very lengthened observation of the use of opium among natives in the East, that when once a native contracted the habit he very rarely gave it up of his own will; that the use of opium seemed to deprive a man of will power; and we have statistics published of the use of opium by Chinese in China which show that 95 per cent of the persons dismissed from our mission hospitals and dispensaries as cured return to the use of the drug within a very few weeks.

297. And would you say that, so far as your observation carried you, you would be inclined to tell us that the limited and moderate use of opium is hardly ever seen?—I think that the term "moderation" can hardly be applied to the use of opium, because whether a man takes a large quantity or a small quantity it has to be taken at ever-recurring intervals, and in process of time has to be increased; that a man, if he takes a very small quantity, has to continue taking it. The habit may be formed within a couple of months, but anything under a couple of months, if you would call that moderation. There is a moderate use of opium, for instance a man might take it for a fortnight for any disease, such as diarrhoea or dysentery, and then giving it up would feel no ill-effects from it; but my experience with Chinese and Burmese in Lower Burmah, and in China itself, has been that when the illness has passed away the habit remains; they like it and keep on using it, and are passed the danger line before they are conscious of it in many cases.

298. Do you recognise the use of opium as having a value in certain climates and for a population exposed to malarial influences?—I think it has a value in removing the pains of rheumatic fever and in giving rest in cases where patients are deprived of sleep, and also in dysentery, cholera, and diarrhoea; but I do not consider that opium is any protection against fever. For instance, Bhamo, at the beginning of my residence there, was one of the most feverish districts in the whole of the Upper Province, and we had very many cases of fever, but I never heard of the natives using opium as a cure for it. They had their own native drugs which they used; and we found in China that in the most feverish districts the opium smokers are the men who are the first to suffer, whereas the healthier coolies who are not addicted to the habit can stand all day planting rice in the blazing sun with their feet in water and mud and not suffer from ague.

299. Is there anything further that you would like to say at this point with reference to the general question of the effects of opium?—From my observations in China, more especially, I find that there is always a tendency among the men who have given up opium smoking to resume the habit, even after the lapse of long years. I have in my mind a man who after giving up his opium smoking, rose to a position of considerable influence and wealth in Shanghai, who after 20

years relapsed into the habit. I have in my mind also two Christian men from Ningpo brought home to England to assist in the translation of the Ningpo New Testament, one man went back, smoked opium, and died a miserable beggar. The other man kept away from opium, and still continues a honoured and useful pastor in China, and such instances could be multiplied.

300. What proportion of the population amongst whom you laboured in China were opium smokers?—It varied very much in different towns and different localities. In the country comparatively little was used; in the towns it was very largely used. Among officials, there are the underlings of the official residences, the Yamen, as they are called, and probably 80 per cent. smoke opium. When you come to the commercial classes, perhaps there are 40 per cent. When you come lower down still to the labouring classes, men such as chair-bearers, coolies, and the men who earn their living in daily toil, almost invariably they are opium smokers; so much so, that when I have sent to the office for chair-bearers and coolies, and have asked for men who have not smoked opium, I have been laughed at for asking such a question, because they said that if they did not smoke opium, they would not be doing the work of beasts.

301. Do you suppose that among these classes, who were "invariably" smokers, their physical powers were impaired by the use of opium?—Extremely so; in fact some of the most miserable specimens you see are men who are doing the very hardest work, and they do it while under the influence of opium. Messenger coolies will travel 30 miles a day, and carry over 100 pounds burden, but they have to stop four or five times a day, and take fresh quantities of opium. I have had men lay down their burdens on the roadside, and refuse to move an inch until they have had more opium.

302. Was there not a considerable portion of the class of men engaged in these laborious occupations who were not consumers of opium?—Not many chair-bearers and coolies. Among the agriculturalists was a very large proportion who are not consumers.

303. Do you know from what source the opium that is consumed by the population amongst whom you lived was obtained? Was it a native produce or was it an importation from India?—You are referring now to Upper Burmah.

304-5. I was referring to China?—The opium that they have in our part of China, the province of Cheh-kiang, is very largely grown in the Wen-chow district, which produces opium often disguised and sold as Indian opium. It is of such superior quality that the Chinese themselves sell it at the same price as the Malwa and the Bengal opium. The greater part of it came from the native cultivation, but that which is used by the higher classes, by the officials, or by wealthy merchants was almost invariably Indian opium. But I would like to say that when I first went to Kin-hwa I would ride for a whole day's journey and never see a poppy field, but now you can hardly go an hour's walk without seeing the poppies in cultivation during the season, so much has it increased during the past ten years in that province.

306. With reference to the effects of opium upon those who use it, we have been led off from Burmah into your Chinese experience; but now returning to Burmah, and to the regulations imposed by the Burmese authorities, and the rules and prohibitions which were in force, can you tell us whether, in your opinion, the edicts of prohibition were effectual in Burmah?—They were effectual upon the people for whom they were issued—they were effectual among the Burmese. We had very special facilities, I think, for getting at the information.

307. Will you tell us what those were?—We had a mission dispensary, which was the only one of the kind there. In fact, before we went there, there were no missionaries in Upper Burmah, with the exception of one at Mandalay. We found among the numbers of people coming every day (sometimes 30, 50, or 100) there were a great many applications from Chinese travellers, from Shans, and Kachyins for medicine to cure opium smoking. An application of the kind was never received from a Burman—we took special notice of the fact. Then we were frequently called out to suicide cases, invariably they were Chinese or Shans who had committed suicide with opium. We found, in the cases where the Burmese committed

suicide, that it was most frequently caused by swallowing gold, or hanging, or by some other means, such as drowning. We have had prisoners sent to us for treatment from the Yamen, or police office, and we had only one case where a man was punished for being intoxicated, and he had got drunk with brandy on an English steamer. The man was sent to us, having been beaten as a punishment, and he died from the effects of it. We can say that the priests themselves in China use opium, but we never saw a Buddhist priest who used opium in Burmah.

308. Can you describe to us the system adopted by the Burmese for preventing the sale of opium—for enforcing obedience to their regulations?—They had the Custom Houses. There was a combination of the priests and politics which I did not admire, but it was very practical and effectual in Burmah, and was that the Buddhist priests themselves always acted as spies upon the civil powers, and reported directly to the King. The Buddhist Archbishop of the day (1876) showed me despatches in cipher which he was then sending to the Court at Mandalay, addressed personally to the King, detailing cases which had taken place, and various crimes committed and the punishments inflicted by the civil authorities. They always acted as spies upon the doings of the people, and anything contrary to Buddhist law, apart from the national law, was at once reported, and the priests themselves accused people to the civil authorities. Apart from that, I do not know of any special regulations which the Burmese established. They searched the baggage of passengers arriving at the various little towns, and there were always a number of loungers about, belonging to the official residences, who seem to make it their business to spy out other people's faults, and make their living upon it. This was during the reign of King Mindoon, and later during the reign of King Theebaw.

309. Then would you say that the policy of the Government in enforcing the prohibition of opium was supported by the general opinion of the country?—I think the strength of the Government policy lay just in that fact, that they had the conscience of the people as a whole behind them, and that the people approved of the measures, knowing that they were for their good.

310. If public opinion had been in the contrary sense, would you say that the task of the Government in proposing an absolute prohibition would have been almost impossible?—The difficulties would have been very largely increased, and special measures would have had to be taken. I do not know how far it would be right to apply the word "impossible;" the experiment has not been tried.

311. But evidently it would have been much more difficult?—Much more difficult.

312. You have explained to us the action of the Burmese authorities with reference to the Burmese population; what was their attitude in regard to this opium question in relation to the foreigners resident among them, taking first the Kachyins, about whom I think you wish to speak to us?—The Kachyins. They are people living between Bhamo and China, in the mountainous districts. They have never been really controlled either by China or Burmah. Opium is used among them to a large extent, especially on the Chinese borders. Many of them come into Bhamo, and bring opium with them, and in many cases there have been disputes between the Burmese authorities and the Kachyins, through the former trying to take possession of the opium, so that the question was at last settled by the Kachyins being shut out at night from the city of Bhamo, and being allowed to sleep in special places set apart for them, and there they smoked and quarrelled to their heart's content. The reason the Burmans give for it was that they were opium smokers, and great thieves, and that consequently they would rob and steal if they were not kept out of the city.

313. Then as to the Shans?—The Shans came from the Chinese States, and I think that many of them smoked opium to a greater extent than the Kachyins. They lived in the city in a grove of trees set apart for them and used their opium. The Burmese seemed to take no notice of them, simply tolerated their presence. They only came over during the dry season, and went back again; they came over to the annual fairs and then returned to China; they did not stay as residents in the place. The only opium these people

used came from China; there was none grown in that district.

314. Was there a large number of Chinese living in Bhamo at the time you were there?—The residents would be about 100 in number. They had no Chinese families or Chinese wives; we only saw one Chinese woman all the time we were there, during the four years; and she was such a curiosity that the whole city ran after her to look at her. But they all had Burmese wives, and many of those families were entirely exempt from opium smoking, the influence of the Burmese women being so decidedly against it. Undoubtedly, however, the Chinese residents themselves got opium from Yun-nan, and used it quietly in their own houses; but there were no opium dens. I only saw one opium den in Upper Burmah at the time I was there, and it was on the occasion of taking a tour to the Jade stone district of Mogoung, about 100 miles above Bhamo to the north-west, and there, in a very out-of-the-way place, we came across a small den with six lamps, frequented entirely by Chinese. That was the only den of the kind that I knew of in Upper Burmah at the time.

315. Were there many Chinese travellers in Bhamo during your residence there?—We had in those days a monthly steamer from Mandalay, and the Chinese immigrants coming over from Yun-nan, especially at the time of the suppression of the Taiping rebellion, collected in large numbers in Bhamo until the arrival of the steamer. There would be sometimes 400 or 500 travellers waiting to go down to Mandalay. They would be living in the Chinese quarter, in the Buddhist temples or wherever they could get lodgings, and most of these men brought with them their opium pipes and smoked.

316. Did the Burmese Government attempt to check that habit?—Not to my knowledge; they simply seemed to look upon those people as being best left alone, and if any cases of disorder or trouble arose among them the Burmese authorities usually called upon the Chinese head man in Bhamo to settle it by the customs of the Chinese community.

317. You have been speaking thus far of the regulations which were established by the native Government of Burmah with reference to the suppression of the opium habit. When the country passed under the rule of the Government of India what was the policy then adopted with reference to opium?—The Government of India made a very important proclamation in English, Burmese, and Chinese, to the effect that Her Majesty the Queen-Empress would not receive a revenue from the sale of opium in Upper Burmah, and a law was put upon the Statute Book making it penal to sell opium or any of its preparations to men of the Burmese race. At the same time the possession of opium or liquor by Burmans was not an offence, but it has been made so during the last year, I believe.

318. Well, now, do you think that the law which was established in Upper Burmah, and which permitted the use of opium to the non-Burman population only, was successful in its objects?—My opinion is that it has not been successful.

319. Will you tell us why?—Probably because the strangers in Burmah (the natives of India, the Chinese, Shans, and Kachyins) are allowed to purchase and use certain quantities of opium. Any Burman wishing to get opium or liquor from any of the licensed shops could do so by getting a native of India, or a Chinaman, to purchase it for him. From my correspondence with missionaries in Bhamo, and other parts of the country, I find that my fears are only too well grounded.—Dr. Soltan, of Bhamo (he is now in India), said that while in my day there was not an opium den in the town of Bhamo, now there are many, and among the frequenters are Burmans, and that it is a common thing to see an opium lamp in a Burman house.

320. Where one portion of the population is allowed to smoke opium, and another part is prohibited, the only mode, I presume, of preventing the consumption of opium by the classes under prohibition would be by an independent system of surprise and domiciliary visits, which would be very difficult to carry out?—It would be undoubtedly difficult to carry out prohibition in Upper Burmah, and still more so in Lower Burmah, where the habit of opium smoking has got so strong a hold; but at the same time I think we may safely say that, the conscience of the people being with us, we should be very much helped in any attempt to prohibit;

Rev.
J. S. Adams.
9 Sept. 1893.

in fact from the evidence which the Commission has already before it, in the shape of the Blue Book, on the consumption of opium in India (which is also confirmed by my correspondents in Lower Burmah and Upper Burmah to), there seems to be little doubt that total prohibition is the only remedy to save Burmah from opium smoking to excess.

321. And do you think that that policy would be sustained by the public opinion of the Burmese?—We are informed that in many places the Burmese have offered to substitute other taxation for the revenue derived from opium if it can be removed from their midst, and several of the officials in Lower Burmah report in a way which reflects the very highest credit upon them, and shows that their desire is for the welfare of the people; that they feel that prohibition is the thing necessary, and that Burmese public opinion would support them in any such measures.

322. (*Sir J. Lyall.*) You mean absolute prohibition for all classes?—Yes, for all classes.

323. Including Chinese and everybody else?—So I understand it.

324. (*Chairman.*) Perhaps I might ask you on that question: How do you think such a policy of prohibition would be received by the Chinese who reside in Burmah?—I think that by the respectable class of Chinese it would be received gladly. From conversations that I have had in Rangoon, and Mandalay and Bhamo itself, with respectable Chinese merchants, they feel very keenly the danger to which their acquaintances and friends are exposed from the sale of opium—there are many of them who will not employ an opium smoker in their office if they can prevent it. But by the lower classes, of course, there would be a great outcry from the opium users themselves.

325. You mean the labouring classes?—I mean the opium consumers themselves.

326. Are there a great number of Chinamen in the district with which you are acquainted in Burmah who are employed in manual labour?—Not employed in manual labour, the number is not very large, I think, in Upper and Lower Burmah, altogether there are about 42,000 Chinese; very few of the Chinese would be employed in manual labour.

327. Are they chiefly engaged in mercantile transactions?—Yes, as regards Upper Burmah. With a population of 3,900,000, the Excise Report places the foreign population of the upper province including the natives of India, at about 55,000; and if 50 per cent. of them are opium smokers, you have the centres of temptation placed in the midst of about four millions of people for the sake of 25,000 opium smokers, from whom you get a large number of the criminal classes.

328. Will you kindly tell us, in a general way, what is the opinion of the missionaries labouring in connexion with your society, and what is the opinion of the native Christians of Burmah on the general question of opium consumption?—I do not know whether I may put this letter in evidence.

329. If you will read it, please?—It is written by Dr. A. T. Rose, an American missionary, on July 8th, 1892. He says: "You must not write our mission indifferent to the opium question; it has been connected with it from the days of Judson and Wade. Thirty years ago I was appointed to write a report on the introduction, increase, and effects of opium in Burmah by the 'British Burmah Missionary Convention.' The elder Hough, Wade, Bennett, and Kincaid were then living and on the field. They all affirmed that there was no opium in Burmah before the English came. We laboured with Sir Arthur Phayre, who professed to believe that the Government must introduce opium in order to control and regulate it, otherwise the country would be flooded with it. As a revenue measure, the introduction of opium is an enormous blunder, for it blasts the vital sources of revenue, it converts honest labourers into idle thieves and vagabonds. If all the cultivators in Burmah were to take to growing opium, in five years there would not be a basket of rice. I have never known a Burman or Karen to use it who did not go to the bad sharp."

330. Would you say that that letter represents the general opinion entertained by the missionaries of your society?—I think so, and by the many thousands of native Christians in Burmah. I may perhaps say that as regards opium and liquor the feeling is the same

in Burmah as in China. All these Burmese Christians are teetotallers and abstainers from opium.

331. And abstainers from alcohol also?—Abstainers from alcohol also.

332. Do they distinguish between alcohol and opium; do they consider that the one is more grave and objectionable than the other?—I do not know that they make comparisons between the two habits, but unfortunately when a Burman does take to drinking, he does not drink in moderation. We in this country recognise a moderate use of liquor, but, with the Burman, he usually goes in for it strongly, and it is a matter of offence against Church government and against their Christian faith to use liquor. Possibly that is so, because nearly all the American missionaries are teetotallers, and they have made the temperance work a strong point.

333. Is the tendency to the abuse of liquor a prevalent vice among that population?—More so among the Burmese than among the Chinese.

334. I suppose the nature of the climate is such that alcohol, regarded medicinally, is not a necessary article of consumption?—I should not think so, for a Burman or a foreigner.

335. Are you cognisant of any special injury inflicted upon the native Churches by the spread of the opium habit, and can you tell us by what means the spread of that habit among them has been induced?—Dr. Bunker, of the Karen Mission in Toungoo, reports to his Missionary Board that a great number of his Karen Christians have fallen under the influence of the opium habit, and that as a consequence schools have been closed; self-supporting churches have been shut up; that in cases, churches of some hundreds of Christians have been dismissed and disbanded entirely; that some of the oldest native pastors have been expelled from the Church and have become vagabonds and rogues; and his despair is very great at seeing the evil that is worked among them. He states that the cause was that many of these outlying districts of the Hills near Toungoo have been visited by Chinese from Toungoo, who have settled among them and given away small packets of opium to the young men until the habit has been induced; then they have charged a small price for it, and gradually a trade has sprung up. Other missionaries, in different parts, in Mandalay, Thayetmyo, Prome, Hentleda, Bassien, and especially in Rangoon, tell us very much the same story of honoured and trusted Christians falling victims to the habit.

336. Can you sum up in a few words your impressions of the whole case as it relates to Burmah?—My personal observation extends only to the first four years, but the remainder of the time I have knowledge from evidence received from my friends there, with whom I have kept up a constant correspondence. I feel sure that the consumption of opium is increasing, both in Upper and Lower Burmah, that its use is attended by the most disastrous consequences to those who come under its influence, that measures which have been adopted in Upper Burmah have been attended with but qualified success, if not with absolute failure; that in Lower Burmah we look forward with very grave apprehension to the measure lately introduced by the Government, involving, as it does, permission for the Chinese and others to use opium. It seems to us that you cannot isolate a sin of this kind, any more than you can isolate cholera. If we were to pass an edict in England that only the Scotchmen were to use whisky and that no one else was to touch it, it would be simply a failure; and while we recognise with gratitude and very deep thankfulness the attitude of most of the officials in Burmah towards the opium traffic, we feel sure that until it is entirely abolished they will never be able to suppress the smuggling and the illicit trade that there is in opium. They suppressed ganja in Burmah, which is a weed growing by the roadside. The product, for smoking or eating, is easily made, and the use of it has almost entirely passed away among the Burmans since it was suppressed, and I do not see any reason why opium could not be treated in the same way. At any rate, the attitude of the Government in opposing it would confirm the good feelings, and the right impressions of the Burmese people, and they would support the Government loyally in doing so. As it is, we are on the wrong side as regards the legalization of opium, which the Burman conscience condemns. Of course they do not understand, as we understand, the reasons for the high license.

Rev.
J. S. Adams.
9 Sept. 1893.

337. Then you do not think that the resistance which would be offered by the Chinese residents in Burmah to a policy of total prohibition would present an insurmountable difficulty to the Government?—I do not think that the opium-using inhabitants of Burmah are of sufficient value to the country to be consulted in the matter, because I think it is very likely, if they found that they could not get opium there, they would go to some other country where they could get it, and it would be all the better for Burmah if they did so.

338. Now, to return to China; how long were you in China, and with what provinces were you acquainted?—I am acquainted with the provinces of Hupeh, Kiangsi, Kiangsu, Shantung, and Chehkiang. These are all provinces, one in the north, and the others in the middle of China, and I have lived in those provinces for 13 years.

339. What was the attitude of the native population of those districts (which were remote from the Treaty ports) towards you and your brethren in the Mission?—As a general thing, very friendly. We met isolated cases where men seemed to think that when they saw a foreigner it was a fair thing to throw a brick at him, but as a general thing the Chinese always treated us with extreme courtesy.

340. You were exposed to no personal danger in travelling about?—For the last ten years I have lived 250 miles from any other Mission station. My wife and children have been left alone in that Chinese city, taken their daily walks, received visitors, and have never received a single insult.

341. With your large experience of China, how far do you agree with the evidence given yesterday by Dr. Maxwell?—I agree entirely with Dr. Maxwell in everything that he said. There are some points that I should like to emphasize very much.

342. What are those points?—First, his view that opium is a hindrance to the spread of the Gospel, and also his statement of the attitude of the Christian Church towards it. No man is recognised as a Christian who buys or sells, or uses opium in any shape or form.

343. Recognised by the Chinese Christians you mean?—By the Protestants or Catholics of China. I agree, too, with Dr. Maxwell in his view that there is no power on the part of China to increase the amount of import duty on opium.

344. I think we will not go into that. I shall address an inquiry to the Foreign Office on that subject?—Very good, my Lord. I will put this in as a parenthesis, that I have come up armed with some opinions and impressions on the subject.

345. Well, if you can give them to us briefly we will consider them?—The fact of the amount of duty fixed upon opium by the Treaties being a fixed quantity, which the Chinese cannot increase without breaking through the Treaties, I think sufficiently indicates that they are not free in the matter; but Dr. J. M. Dudgeon, in his paper read on May 12th, 1890, before the Shanghai Missionary Conference, states that in his opinion China was not free to increase the amount of duty on opium, or to make any motion towards putting down her own cultivation until she was able to shut out the import of foreign opium; and that view was confirmed by all the missionaries present, and they stated that, "When the favourable moment arrives, and China is no longer hampered with the foreign import, I believe the Government is strong enough to have its will carried out." (That is for the suppression of opium). "The great body of the people will hail with satisfaction, under these circumstances, such action on the part of the Emperor." And again: "That from a full and careful study of the whole question, from the history of the nine years' negotiations which led up to the late opium agreement, this conference is clearly of the opinion that China is not free to act as she could and would act in the matter, either of increased taxation on the foreign opium, or in the total suppression of the growth of the poppy, and the consumption of the drug within her own territories."

346. (Sir J. Lyall.) What date is that?—1890, May 12th.

347. (Chairman.) You recognise that this statement of Mr. Dudgeon's does not harmonise with the authoritative statement which was made by Sir James Fergusson in the House of Commons?—It was made six months before that statement in the House of Commons.

I confirm Dr. Maxwell very strongly in his comparison between opium and drink. "I think opium seizes on a man more quickly than drink, so that a man may be a moderate consumer of alcohol; but in my estimation there is no such thing as a moderate consumer of opium, except in the sense in which I defined previously. The grip which it has upon a man is very much more strong than that of drink." I may say that I have been in charge of a Mission hospital containing 100 beds for opium smokers, and we have had again and again to dismiss men as practically incurable, either from emaciation or from some disease which seems to spring up as a result of the weakness of the system; as soon as the opium is removed from them they become victims to some disease or other, and also because the will power is absolutely gone. The only cases that we look upon with any satisfaction are men who have been converted through the influence of the Holy Spirit and become real Christians, because it gives them a new will power and a new life, and they are able to resist the temptation; but I have not any confidence in the cure of opium smokers apart from the Divine Spirit's influence. We have known of many such men who have been rescued, but only through the influence of Christian faith.

348. Then, in your opinion, presuming that the importation from India were stopped, would the Chinese Government endeavour seriously to reduce the area under cultivation in China with a view to the entire suppression of the use of opium?—I have, my Lord, a very strong opinion that the Chinese would do so. It was only in 1890 that the Emperor finally revoked all the edicts prohibiting the cultivation of the poppy. Previous to that time the cultivation was entirely unofficial and unrecognised. I have seen myself, again and again, in the city of Kin-hwa the Governor of that city going out with soldiers and searching in different districts for the poppy under cultivation, destroying all the crops and beating the farmers for growing it. The fact is that during the past 30 years in China opium has been grown whenever a pro-opium official has been in power; when the three years of the pro-opium authority have passed away, and an anti-opium official has been put in power, the poppy has gone out of cultivation as if it had been struck by a blight. I believe there is an increasing conscience on the part of the people of China against opium; although the cultivation is so rapidly increasing, it seems as if the people were taking sides much more definitely for and against. As far as the Chinese officials are concerned, there is no doubt that the revenue question becomes a great difficulty. China is not a rich country, and the question of the import duty, I imagine, would very much weaken the hands of any Chinese official who tried to abolish it.

349. Is there a wide divergence of view among the official class upon the opium question, some being entirely opposed to the use of opium, and others regarding the habit more leniently?—I am happy to be able to say, on the authority of Dr. Dudgeon, who is a medical man occasionally attending the Court in Pekin, that of the 16 Viceroy's in China, only one is under suspicion of being an opium smoker, and that most of the very high officials are opposed to it. The Emperor himself is opposed to the use of opium, principally because his father, the eighth prince, when he died, was a victim of opium; he took opium in his last illness, and became addicted to it, and his precept to the Emperor was, "Have nothing whatever to do with it." But there are among the lower class of officials large numbers of men who are very poor—they get their offices through using borrowed money, and through giving bribes. They find in the gifts of the opium merchants a very ready means of replenishing their exchequers, and they permit things to go on which otherwise they would not do. I believe among the higher class of officials there is a very strong opinion against opium. I may say that I have a personal friend, General Siao, who fought against Russia, and also against the French, who is at present in command of the garrisons of the Prefecture, and he gave me a dinner before leaving China—a sort of farewell dinner—and in the presence of all the officers he said, "If you English people would only let us have liberty to do as we like in our own country, we would soon put an end to the opium trade." "More easily said than done," your Excellency, said I; "how would you accomplish it?" "We would open opium refuges in every city, employ foreign and native doctors, and compel the people to go and buy anti-

Rec.
J. S. Adams.
9 Sept. 1893.

" opium medicine, and use all means to stop the trade " in opium; and if there were any so degraded as to refuse to listen to the voice of reason, we would " employ force with them." With that he drew his sword as he spoke, probably meaning that he would cut off their heads. I cannot say that I would recommend such extreme measures, but it indicated that in his mind any measures ought to be taken in order to prevent the spread of opium smoking in China. I ought to say this—I feel it of very great importance—that I think many merchants and officials in China do not see the inner life of the Chinese as we do; there are comparatively few among the merchants who can speak Chinese. Our English Consuls, as a rule, speak Chinese thoroughly well, but they do not mix much with the people. We have constantly gone in and out among the Chinese, and we find, from the evidence given us by the wives and the children of often wealthy officials who have lost money, that opium is causing an immense amount of misery, not only among the working classes, but also among the higher, that is to say, among the lower classes of the mandarins. The wife of the official governing our own city lamented to us that her son had become an opium smoker; and that for years he had been losing, by opium smoking and the things which come with it (the gambling, and the consorting with bad characters, and so forth), more money than his father was making in his office every year. We have people outside our East Gate, living in the beggars' quarter, who ten years ago, when I first went to Kin-hwa, were living in the west end of the city, in some of the finest houses in the place, and these families have come down entirely through opium. I am convinced that the more closely we study the question, and look into the facts among the people, the more deeply we shall feel the greatness of the evil.

350. Have you any comments that you would like to offer in conclusion with reference to the evidence taken from previous witnesses?—I have already trespassed so much upon your time that I hardly venture to say that I think our political influence in China suffers through the opium traffic, and also that legitimate trade is hindered very much by it. I think other evidence will be offered to the Commission, or that there is no need for me to go into that question. I would merely like to indicate that at the time when telegraphs were discussed in China we had in Pekin representatives of English firms, American, French, German, and others; but, to the surprise of everyone, this great telegraph system in China has been committed to the Scandinavians. Every provincial city in China, with the exception of Hunan, is now connected with Pekin by telegraph, and Scandinavians have done the whole work. Of course I do not say that that has been the result of our opium trade, but it is quite possible that it does prejudice us in the eyes of Chinese officials—it does in the eyes of Chinese merchants, I know.

351. It makes England, you mean, generally unpopular?—I think so. Then, in preaching, we have often had the Chinese throw it in our faces that we are Englishmen; they sometimes will do it in our chapels, for we have everyday preaching in our own chapels; and the common objection—the stock objection—is: "Oh, you are the people who bring us the " opium; you are the English people who deal with " us in opium, and yet you come here to teach us " morality! We do not believe in any such morality." And again and again, in preaching in the open air in large towns, where I have been for the first time, directly the people have heard that I am an Englishman, opium smokers have got up, shown their rags and emaciated forms, and denounced us as the people who have caused all their misery. The result has been that we missionaries have had no hold upon the people—the people have been disgusted with us. Then, your Lordship asked Sir Joseph Pease a question about the public meetings that have been held in various parts of the country.

352-3. In Great Britain and Ireland?—I believe at the present time there is a very deep interest all over the country in this question.

354. Have you attended any meetings yourself?—I have. I came home for a holiday, but I have turned my holiday into a year's campaign on this subject, at considerable inconvenience and loss to myself; but I am convinced of this, that, especially among the Midlands, and in the North, and in certain parts of Ireland, there is a deepening interest in this question. The membership of the various Anti-Opium Societies

is about 12,000 persons, and they are all earnestly seeking to spread information on this subject. The political aspect has been steadily kept out of view; it is not in any sense a party question, but it is one in which most Christian people feel a deep interest.

355. The anti-opium movement in Great Britain and Ireland, I presume, is as much an object of general support as is the movement to prevent the use of alcohol?—Well, the support is very general, and people do recognise that it is a kindred subject, and they have given us very good help and encouragement.

356. (*Sir J. Lyall.*) Do you think that the Burmese native Government was really able to prohibit opium smoking among the Burmese before the annexation—I mean before we took Upper Burmah?—During the four years I was there I never saw a Burman smoke opium. That was during the reign of King Mindoon and the first year of the reign of King Theebaw.

357. But with other opium-smoking people all round them, and the great opium-producing districts of Western China near them, do you think it is possible that it could have been absolutely prohibited?—I think that if the conscience of the Burman nation had not been at the back of that prohibition, they probably could not have prevented it, with their broken-down machinery.

358. As a matter of fact you think none of the Burmese smoked opium?—As a matter of fact, I think that none of the Burmese, to my knowledge, smoked opium.

359. The description you give of the effects of opium smoking is a very terrible one. I suppose you know that there are other people who have lived in China, and other countries in the East, who hold a different opinion?—Yes.

360. A much more moderate opinion?—I know that, for instance, the merchants at the ports would perhaps have an opium-smoking comrade, and they produce him to you, and they say: "There, that man " smokes opium, and he is as bright a man in business " as I am; he is always up to his work, and he has " smoked opium for a certain number of years." But that man has probably been primed with opium before he comes to his work, and when he goes to his luncheon he is again filled up—wound up, like a musical box, to go for a certain time until he is run down, and unless he takes his three daily doses he cannot do his work. Such a view as that is very misleading.

361. Is it not a fact that in a great part of China, particularly the part which Europeans see most of, opium smoking is just about as common among the men (except perhaps among the very poor who cannot afford it) as tobacco smoking is among Englishmen—very little less common. I have heard it frequently asserted; do you think it is true or not?—In some cases it may be true, but China is a very large country, and the practice differs very much. In those places that I am acquainted with it is not so common as tobacco smoking. During my absence from England I notice that tobacco smoking has increased very greatly in England.

362. I was on board a ship, now, the other day, with a great number of Chinese going from China to California. As far as I could see, every Chinaman of the lot smoked opium?—Very probably.

363. They spent the day, or part of the day, in smoking opium?—They do in some places—they do so on the River Yangtse.

364. In California and Australia the Chinamen are such good labourers, such good workers that, as you know, savage assaults have been made upon them by English working-men, and excessive jealousy has been aroused because they have really cut out the English working-man. Is it possible, if opium smoking is such a dreadful vice, I do not mean to say it is not a vice and a bad habit, but if the consequences of opium are anything like what you have described, is it possible that these people (who nearly all smoke opium) could work, and make money, and succeed, as the Chinese do in Australia and California?—I think that on close examination we should find that the great majority of opium smokers are not the people who do the work, and that they are really parasites among the common crowd of Chinese workers. In cases where a man is an opium smoker, during the time that he is under the influence of the drug, he can do his work as well as anybody, and probably, owing to the extra stimulation, a little better than most Chinese. But the system is

affected in this way : it is an intense stimulation and an intense depression, and when the man is under the influence of the depression he is absolutely worthless. It is only while he is under the influence of the stimulant that he is of value, and a great deal of their hard work is performed under the influence of the stimulating effect of the drug, and therefore people say that opium has no evil effects because they see the man at his best and not at his worst. That is my view of the question, and I may perhaps say that the evil effects of opium are sometimes long in developing themselves. In many cases that I have known, opium smokers have taken the drug for 8 or 10 years, and have shown very little emaciation, but the mischief has been going on, and directly hard times have come, and they have not been able to get good food and stimulants (wine and so forth), then they have gone rapidly to the bad.

365. The great bulk of moderate opium smokers live as long as anybody else, do they not?—So far as opium smokers are concerned they may live as long as anybody else, but I find this, Sir James, that in the famine times, and when epidemics of fever take place, the first to die are the opium smokers; they are predisposed to disease, and their bodies seem to invite the attack of any wandering disease that comes along.

366. These Kachyins and Shans—you mentioned those tribes that are on the borders of Burmah—they are confirmed opium smokers, are they not?—Many of them are.

367. Well, they are people of very strong physique, and very energetic, are they not—compared to the Burmese rather remarkably so?—Yes; I think that, as a rule, the Hill men are strong in comparison with the dwellers in the plains. We have the same thing in other countries, but I have come across many Kachyins and Shans who have suffered severely from the effects of opium smoking.

368. The Burmese Government, on religious grounds, through the influence of the Buddhist priesthood, prohibited the use of opium, and our Government, finding it prohibited, carried on the prohibition?—Yes.

369. Was spirit drinking also forbidden by the Burmese Government?—The canon of the Buddhist law is, "Thou shalt not touch anything that intoxicates"; therefore spirit drinking was also forbidden.

370. When you were in Upper Burmah did you ever see the Burmese drinking spirits?—Not in Upper Burmah. The difference is very marked between Upper and Lower Burmah, coming down across the frontiers; in fact, as I remarked in my evidence in chief, I only saw one case of a man being punished for drinking spirits; he had a thousand blows with a small rattan.

371. The Mahomedan religion also prohibits, or at least strongly condemns, the use of spirits, and there are a great many Mahomedans in India, particularly in some parts, where they are in fact the great majority of the population. I suppose you would think that we ought to prohibit the use of spirits too?—I think, if the use of spirits is doing as much harm as the use of opium is, that it would be a very pertinent duty for us to prohibit the use of spirits. I notice in the Report of the Excise Department in Burmah for 1891–92, in certain places the Deputy Commissioner notices the good effect produced by the spread of the Mahomedan religion in putting down intoxication among the natives.

372. Now the question is, should these things be enforced by Government or should they be left to religious influences?—I hardly know whether I am prepared to define the duties of Government. It seems to me that it is the duty of the Government to protect its people from anything that is injuring them if possible. The tendency in the past has not always been to protect the people, but rather, I fear, to push the trade.

373. (Mr. Pease.) I just wish to ask whether the consumption of opium in Burmah is confined to smoking, or whether it is partly consumed by eating, partly by smoking?—In Burmah, I believe, they smoke very largely; in China it is smoked, and then the ashes of

the opium are taken and mixed with fresh opium and again smoked; and very frequently the third burning of ashes is smoked. In some cases, with working men who have not time to spend over smoking (which is a very tedious business, taking about an hour to satisfy an ordinary craving), they take it in the shape of laudanum dissolved in spirits, or take it simply as a pill, washing it down with a cup of tea.

374. Is it your experience that the Chinese look upon the smoking of opium as an indulgence of which they have no cause to be ashamed?—I have never yet met a Chinaman who defended opium smoking or eating. They all look upon it as a thing to be ashamed of; in fact, on several occasions when I first went to China I nearly got into trouble by asking the question, "Are you an opium smoker," and to this day, if you wanted to insult a Chinaman, you would have no need to say anything, but simply put the finger and thumb to the mouth, and waggle the hand, and it means, "You are a confirmed opium smoker," and it is taken as an insult. The boys often insult their parents in that way.

375. (Mr. Moubray.) I have only one question to ask, arising out of what you told Sir James Lyall. You said. I think, that the Burmese Government had succeeded in restricting the consumption of opium, not to the Burmese, but to the other inhabitants of Upper Burmah?—No, they let these resident Chinese smoke opium. Strictly speaking, it was not recognised as a public thing. In cases where Chinese travellers brought down opium in any quantity it was always seized, and the travellers themselves were punished for smoking it; but they did not seem to care so much to enforce the prohibition upon people of other races as they did upon their own people.

376. In fact, I rather gathered that they had succeeded in drawing the distinction which you seemed to think the English Government would not be able to draw, between consumption by the Burmese and consumption by other races in Upper Burmah?—The number of strangers in Upper Burmah at that time was very limited indeed. As I have said, 500 or 600 travellers came through in the course of a month; so that really there was very little opium smoking seen except when the Shans came over in the dry season to sell their iron ware and then go back again. Those people the Burmese authorities were really afraid to meddle with.

377. Then is it the increase of what you call foreigners in Upper Burmah which leads you to think that the English Government could not do that which the Burmese Government did in their time?—I think the English Government could suppress the use of opium among all classes of people in Upper Burmah, and I think that is the only remedy at their disposal.

378. I quite understood you to say that; but I wanted to know what was your reason for thinking it impossible that they could prevent the Burmese consuming it and at the same time allow others?—Simply because of our experience and the statements in the Report of the Excise Department in Burmah. The law itself is altogether inoperative. If you will allow me I will read two extracts from the Report of the Excise Department in Upper Burmah, page 21. "The consumption of liquors and opium is theoretically confined to the above-mentioned population, but there can be no doubt that a considerable amount of both finds its way into the hands of Burmese." And again on page 22, "The licenses for the sale of opium and liquor are intended for the convenience of the non-Burman population of Upper Burmah, and sale of either liquor or opium to Burmans is prohibited by law. But there can be no doubt that the prohibition is, in practice, inoperative."

379. I understand from what you have just said that you think the increasing difficulty of restricting the use of opium to foreigners in Upper Burmah arises very much from the increased number of foreigners now in Upper Burmah as compared with the difficulty under the late Burmese Government?—From that increase and also from the fact that our licensed shops are there.

The witness withdrew.

The Reverend HUDSON TAYLOR called in and examined.

380. (Chairman.) To what communion do you belong, Mr. Taylor?—Personally I am a Baptist; (but the mission I represent is interdenominational, its missionaries being members of all sections of the Christian Church).

381. And are you also a member of the Royal College of Surgeons?—Yes.

382. I believe that you are the founder and general director of the China Inland Mission?—That is so, my Lord.

Rev.
J. S. Adams.
9 Sept. 1898.

Rev.
H. Taylor.

Rev.
H. Taylor.
9 Sept. 1893.

383. Can you give us very shortly what is the scope of the work undertaken by that Mission?—We have at the present time about 530 missionary workers of both sexes in 14 of the 18 provinces of China, and also a station at Bhamo in Upper Burmah.

384. You yourself have had personal experience in China?—I went out in 1853, 40 years ago, and have been a missionary ever since.

385. How many years were you out in China?—I could not now tell how many I have been in China, as I have been backwards and forwards a good deal latterly; but my connexion with the work has been of 40 years, standing.

386. In what districts have you laboured in China?—Personally I have lived in a number of towns for several years. I may say, Shanghai from 1854 to 1856, and the intervals of time not mentioned below when in China; in Swatow in 1856; in Ningpo, 1857 to 1860; in Hang-chow, 1866 to 1868; in Yang-chau, 1868 and 1869; in Chin-kiang, two years, 1870 and 1871; in Chefoo, 1879 to 1882; and I have made visits of several months' duration to other towns.

387. The Commission may infer from what you have told us that you have had wide opportunities of forming an opinion as to the questions which were referred to us?—I thought it might be helpful, my Lord, if I marked by a red line on a map the districts that I personally visited, and am acquainted with, either from visitation or residence. [*Mr. Taylor here handed the map to the Chairman.*] I have not been further west than Hanchung (Shen-si province), as you will see. These provinces I visited. [*Mr. Taylor here pointed out on the map the provinces he had visited, viz., Shen-si, Shan-si, Chih-li, Shan-tung, Kiang-su, Goo-hwuy, Hu-peh, Kiang-si, Cheh-kiang, Kwang-tung.*] I spent a great deal of time in Cheh-kiang and Kiang-su, and more or less in Kiang-si.

388. Can you give us, in a general statement, what is your experience as to the effects of opium, and especially Indian opium, on Chinese consumers, whether regarded morally or physically?—I do not know that I am able to discriminate much between the effects of Indian and Chinese opium, because in the many cases of Chinese opium smokers with whom I have had to do, one has not attempted to trace which opium they were using. I might say that probably in my earlier experiences Indian opium was the drug used, and latterly Chinese opium has been more largely used by those I have had to do with. As to the effects of opium on the Chinese I should like to speak definitely.

389. The Commission would wish you to give a pretty full description of your views on this question?—The effects on the Chinese, I, *physically*, are (a) to interfere with the nutritive system. A man who smokes opium has a lessened appetite. If he be in a good position, able to stimulate the stomach by nutritious food and stimulating dishes, he might continue using a moderate quantity, sometimes for a considerable period, without showing that emaciation which is one of the most marked features where those advantages are not possessed. When a man is unable from any circumstances to get the highly-spiced dishes and nutritious food that are necessary for him as an opium smoker, he becomes very thin and spare and runs down in physical strength very steadily as a rule. Then (b) opium affects very seriously the nervous system. Of course you know the delightful sedative effect of opium; and this is a very delicious effect to the Chinese—it is a sort of Elysium to them; but it is followed by nervous irritability and sleeplessness when without opium. It is a proverb among the Chinese, and it is well known, that the opium-smoker turns night into day and day into night; he is sleepless at night, and unless under the influence of considerable doses he does not get his proper rest; but he is sleepy during the day, and that effect is one that can only be kept under by increasing the dose; and hence the tremendous temptation for men who want to work during the day to increase the amount of opium taken. Then (c) it has a very serious effect, bearing upon national welfare, in its effect on the generative system. In the first instance it is a stimulant, and it very frequently leads to immorality. One of the greatest difficulties, often met with, when a Chinaman wants to break off the use of opium is spermatorrhœa, which comes on, and is a very troublesome symptom. I have had a great number of opium smokers under my care at one time or another, and this is a very frequent symptom, just as diarrhœa comes on in the absence of opium, so spermatorrhœa will also come

on; and this is a serious effect. If the opium smoking is continued, and the system allowed to run down, impotence and sterility are the consequence. Where both husband and wife are opium smokers, you find the children are very feeble, of low vitality, and are easily carried off by infantile diseases. If the opium smoking is carried by both parents to excess, there usually are no children. Then (d) the general effect of it is to lower the vitality of men who, perhaps, may seem to be fairly well, and get along under ordinary circumstances, but in fever or any epidemic they seem to have such lessened power of resistance on the one hand, or of recuperation on the other hand, that many lives are lost. I do not think that opium smokers, as a rule—there are exceptions—live as long as the rest of the population. Of course you find cases of men who have smoked opium for many years and do reach to old age; but they are exceptional, according to my experience. Then, II., as to the mental system. The first effect of opium is stimulative. An opium smoker will oftentimes do his best work when under the influence of the drug; and that is a great temptation to young and middle-aged students who have to go in for prolonged examinations. They often do better work through the use of the drug than perhaps they would do without it. But there follows a depressing effect, and there surely ensues a dulled, ultimately a very dulled, mental state; and unless the stimulant is kept up men get sleepy and neglect their work and go down. But, III., the most terrible effect is on the moral system. Opium smokers have always a dulled conscience. I do not think that there is any exception. They have dulled moral perceptions; and if they smoke to excess, as the system goes down, generally the moral system in particular goes down, and there is nothing that an opium smoker will not do to get the drug; his natural affection seems as a rule to be first loosened and then to disappear; and in very, very many cases, where poverty comes on—which is a very natural result of opium smoking—the children are disposed of; the wife may be sold, or, still worse, kept for immoral purposes; and it is one of the greatest difficulties to rouse the conscience of an opium smoker, and when it is roused the poor fellow's will-power is so entirely gone that he is very frequently unable to resist temptation. I think that these are the principal points.

390. Would you say that the opium habit was very generally prevalent among the Chinese?—When I first reached China it was comparatively rare; but it has spread very rapidly during the last 20 years, still more rapidly during the last 10; it is frightfully prevalent now.

391. The Chinese have had a good reputation, have they not, as workers?—They are most industrious people as a race, but the opium smoker is as noted for laziness as the other Chinaman is for industry.

392. Is it not the case that a great number of the Chinamen who emigrate, and whose services are found to be of great value in carrying on the industries of the place where they are temporarily employed, are opium smokers more or less?—I have no means of judging what proportion of the emigrants from China are opium smokers. I have met Chinese in Australia and in America; those whom I happen to have come across were not opium smokers; and the Chinese whom I have met, especially the better classes of them, in Australia, are bitterly opposed to opium being allowed to be introduced among them. Now, surely they ought to know their own race, and the effect upon their own people. If it were beneficial, why should the moral and better men among them be unanimously and bitterly opposed to it?

393.—Will you tell us how you find that the assumed connexion of the British Government with the opium traffic constitutes a hindrance to the acceptance of Christianity by the Chinese?—It makes us very unpopular. I would give anything many times to conceal my nationality, if one could legitimately do it, because I know inevitably the use that will be made of it. As I have mentioned, I have travelled extensively in China. I have never been in a province in which the question of the action of the British Government with regard to opium has not been brought up as an argument against the truth of the beneficial result of Christianity.

394. Do you consider that the unpopularity which you believe attaches to the British Government for its connexion with the opium traffic impedes the work of other Christian missionaries, such as those coming from

the United States, or from France, or from other countries?—One of the most common remarks to be met with is one which affects them as much as us. "If Christianity is worth anything, why do you not go home and preach to your own Government." If Christianity is worth nothing, of course it does not matter whether an American or a German missionary is propagating it, if it be a powerless religion. Whatever is the real state of the case, there is no question that amongst the officials, amongst the literary classes, and amongst the common people, we are believed to be the authors of their national ruin and curse through opium.

395. Are there any other matters bearing on this question that you would like to bring before us; you have given us very clearly your general view of the case, resting on your long experience?—Is it not a very serious thing that we have by this opium trade alienated the sympathies and the friendship, not of the worst classes of China but of the best? I cannot conceive a Chinaman to be a patriot, and not hate England; and as an Englishman it is very painful and very humiliating to feel this—that the best Chinese are those who dislike us most, and not the worst Chinese—that the best feel that we have inflicted upon them an irreparable injury. Then, again, the poor victims. We have in our own Mission—other missionaries do the same thing—a large number of small hospitals for the reclamation of opium smokers, and a very large number of Chinese come under our care in this way. Men, when I had charge of a hospital, came as far as 200 miles, in order to be cured. Their feelings are very strong; and when we appeal to these refugees to them as evidence that Christianity has no sympathy with evil-living and evil-doing, they say, "Ah! but 'you cure by tens and you poison by tens of thousands';" and our efforts to bring about a better state of feeling are neutralised by the fact that our nation is believed by the Chinese unquestionably, whether rightly or wrongly, to be the cause of their national ruin and degradation in this respect.

396. So far as you know among the Chinese, generally, it is not understood that an entire change has come over the public opinion of this country with reference to the opium question, that we should certainly, not as a nation, be prepared by forcible means to compel the Chinese to receive importations of opium from India; that is not sufficiently recognised among them?—It is not generally known, my Lord, and I think some of us would feel very much afraid of assuring the Chinese, that if they were to exclude opium there would be no warlike measures taken. I dare not tell the Chinamen so. I am not at all satisfied that it would be so. I am quite sure there would be no war nominally on the ground of opium. But I am not at all satisfied.

397. You are aware, are you not, that a statement was authoritatively made in that sense in the House of Commons, by Sir James Fergusson, as representing Her Majesty's Government?—We have heard of that statement; but many things take place in the House that are not very much confirmed.

398. There was no dissentient voice in the House of Commons when Sir James Fergusson gave that assurance?—I think it would not be easy to convince the Chinese, unless they had an authoritative declaration from our Government, that we were likely to reverse our whole policy since the first war with China.

399. The statement in the House of Commons is, as you know, an authoritative declaration on the part of the British Government; there is no more effectual way of making an authoritative statement on behalf of the British Government than to make a statement officially in the House of Commons?—Would it not be well if this were conveyed to the Chinese officially?

400. They have a legation in London, whose duty it would be to take cognizance of a statement of that kind in the House of Commons?—I think it would be very difficult to convince the Chinese, unless definite measures were taken, that we had reversed our whole policy.

401. Well, what kind of "definite measures" would you suggest?—Communication to the Chinese Government would be a definite measure; and I think it would be very widely published in China. Of course, every missionary would be only too thankful to do all he could in spreading it for his own sake, and for the sake of the work with which he is connected; and I may say we have made very widely known the fact

that there is an Anti-Opium Society, and a large anti-opium feeling in the country; but the Chinese say to us, "Well, you have talked a great deal; why do you not do more; why do you not act?"

402. I think the Chinese Government have every means of knowing from the statements, which have been made upon authority in the House of Commons, that it is open to them to adopt any policy which they may think fit with reference to the importation of opium from outside sources?—They would scarcely be prepared at present to deal with our Treaty, I imagine, as the Americans have dealt with their Treaty in the matter of the Geary Act.

403. Do you not think that the Chinese Government are restrained from taking any action on the lines that you would wish rather by considerations of revenue than by any apprehension, if they prohibited the importation, that we should take warlike measures to resist that?—To what extent, at the present time, the Chinese Government may be influenced by questions of revenue, I have no means of judging. We are well aware that they have in times gone by refused to make revenue from this source.

404. (*Sir W. Roberts.*) I should like to ask, Mr. Taylor, as a medical man, do you consider that you can distinguish in the case of opium smokers and opium eaters, as we do with regard to the users of fermented drinks—between an opium sot and a moderate user, as we distinguish between a drunkard and a moderate drinker?—The term a "moderate user of opium" is a little indefinite, and it is very difficult to know exactly what one or another may mean by that. If you mean by a "moderate user" one who has it within his power to desist from the use, or to give it up, the number of those, I should say, was very small indeed, after the first few months of taking it. If you mean by opium-sots those who are living in a condition of the utmost degradation, well, then, one could not really give any statistics as to the proportions.

405. You have told us that you have known of opium smokers who have reached an old age?—Oh, yes.

406. I presume you would say that only those who use opium moderately could reach old age?—I do not remember anyone over 70 or 80 who has taken very large quantities.

407. Seventy or 80?—Yes.

408. Well, that is a pretty good span, is it not?—It is; and, as I say, such persons are very rare.

409. We have been told that in cities chair bearers and coolies are nearly all opium smokers?—I am afraid that it is so now.

410. Then how is it that they are able to do their work?—In the first place, their work is not necessarily continuous and exhaustive. A chair bearer for instance, in a city, will very seldom be on duty consecutively for a couple of hours, and under the influence of the stimulant he can do pretty hard work for that time. There is another class of chair bearers who are employed on long journeys, and it has been my misfortune to have sometimes in a gang of bearers some opium smokers. They are a terrible trouble to one. When the stimulating effect of the opium ceases they are absolutely unable to go on, and your progress will be interrupted from one to two hours however inconvenient it may be. These men are never very old; they break down and die very early.

411. I was going to ask you with regard to that recurrence. You say they do their work well under the influence of the stimulant; how do you distinguish between the drowsy effect of a stimulant and the drowsy effect of a meal; we are obliged to take our meals periodically?—The rest of our bearers who are not opium smokers take their meals at the same time.

412. Does the opium smoker take his smoke with his meals or after?—He will usually take it with his meal or after it, or sometimes instead of it, when the poor wretch has not anything else to take.

413. Would a dose of opium enable him to go on with his work without eating?—For the time being. But it is like borrowed money—when you borrow money, you have got to repay with interest.

414. Of course you know, as a medical man, that we do everything—all our functions are performed—under the effect of a stimulant of some sort or other?—A proper, normal, vital stimulant, of course, is one thing, and a poison is another.

Rev.
H. Taylor.
—
9 Sept. 1893.

Rev.
H. Taylor.

9 Sept. 1893.

415. You know the paradox is here—we hear on the one hand that these Chinese are extremely strong, perform their work well, and nevertheless take opium; and yet we are told these terrible tales of the effect of opium on the system. Have you not distinguished between the sot and the moderate user of opium?—One has distinguished constantly between those who are already going down under it, and those who are well nourished and sustained.

416. I presume you could not give the Commission any idea of the rate of mortality—the death rate?—I am afraid not.

417. I suppose no statistics exist?—None exist; and it would be sheer guesswork. But amongst these labouring classes you very rarely meet with men, who have taken opium and run down, living for many years. They do not, of course, die of the opium, that is as a rule, but of diarrhoea, or dysentery, or fever, which they have no power to rally from. I may say that in one part of the journeys that I frequently have had to take I used to come in contact in earlier years with a large number of coolies who were engaged in conveying vegetable tallow over the hills of Cheh-kiang. These men used to carry about 330 lbs. *avoirdupois* over those high hills. Now, I have never seen an opium-smoking coolie who could carry above 100 lbs. That will give you some idea of the difference in strength.

418. And the other will carry 360 lbs?—330 lbs. *avoirdupois*—tremendous burdens.

419. Do you think that your experience in that respect would be verified by others?—Oh, there is no doubt about it.

420. I presume these effects that you have enumerated, arising in opium smokers, are not conspicuous in all cases—they are not inevitable, but you see them, more or less, occasionally, amongst opium smokers—I mean the degeneration of the conscience, and the effect on the nervous system, on the sexual system: I presume that that is not true with regard to the bulk of opium smokers?—I should say that in the case of nine out of ten persons who take opium in what may be called moderation—if you may use the term for those who only take a drachm or two, say daily—that in nine cases out of ten you will find a deadening of the conscience, you will find inability to sleep without the opium, and very frequently inability to sleep for a good part of the night with it, and more or less impairment of a full fair day's work.

421. That is in about 90 per cent. of the opium smokers?—I should think so, as far as I can recall.

422. So that it is only about 10 per cent. of opium smokers that can be said to be in fair health?—In whom the evil effect is not apparent. There may be a good deal of undermining which is not apparent, may there not? And of course some constitutions, I need not tell you, resist adverse influences longer and more strongly than others. Constitutions are not alike, at home or abroad.

423. Then in your view, Mr. Taylor, it cannot be said, even speaking very broadly, that the opium habit is at all on "all fours" with the alcoholic habit—with the use of alcoholic beverages?—I think it is far worse.

424. (*Sir James Lyall*.) You mentioned the taunts which the Chinese are apt to use in speaking to the missionaries and which are said to be a serious impediment in the way of Christianising efforts. In the pro-opium literature on the subject, I have seen it stated, on the other hand, that the Chinese are a very conceited people, very proud of their own civilisation and of their own philosophy, and all that sort of thing; that they resent strongly—the patriotic sort of Chinamen—the attempts to alter their habits and customs and their religion; that their conceit is very much injured by missionaries addressing them and trying to impress upon them that their religion, that their ideas, were all wrong and that they must take a new religion and that these assertions of theirs about opium is a Chinese way, and a very characteristic way, of showing their resentment and of meeting the missionary; that it is not a thing really felt and believed in by the Chinese generally, but that it is a mere argument used by them. Do you think there is any truth in that?—I do not think there is much truth in it. I have, during my long residence in China, had the personal friendship of a large number

of Chinese—some officials; a larger number of non-officials; some of the literati, a larger number of the middle and lower classes—and I am quite satisfied that there is an honest conscientious belief in the minds of these people generally that we are the enemies of their country.

425. On the ground of opium, are the enemies of their country; or generally because we have forced ourselves upon them?—Largely on the ground of opium; but also because we have forced ourselves upon them, undoubtedly. I had a friend—I may really call him a friend—who was an official, and in friendly intercourse with him I said to him, "I am surprised that you do not discriminate more between the friendly attitude of the Protestant missionary and the assumption (which at that time was very common) amongst the Roman Catholic missionaries of official rank, and their endeavour to force things with a high hand." He said to me, "Well, now, you know, it does very well to talk to the common people about these things, but it will not do to talk to educated people in this way; and we cannot believe that Britain is the friend of our country." "Now," I said, "how do you account for our intercourse with you; what is your own honest view of it; tell me as a friend what is the commonly received view among the officials?" "Well," he said "of course we know the history of your absorption of India, and we know how you first came to India—very quietly, and you have gradually absorbed the country. We believe you have come to China and found it to be a still more desirable country"—(of course they think their own country is perfection)—"and you see that contrary to the state of India we are a united homogeneous people. You demoralise our people with your opium, and get up a large class all over our country who care for no moral principle whatever. You also win over your religious adherents in every part of the country and prepare the way for the absorption of China." I give this as a very natural idea that is very widely prevalent.

426. But is not this a mixed idea with the Chinese? If you could remove that—all the ground that there is in the opium cry—would you not, still leave us as far as possible, I should imagine, obnoxious to the Chinese; would they not still be as opposed as ever to our forcing ourselves upon them, or breaking up their own civilisation and their own customs?—It is much easier to raise a prejudice than to remove it, I need not say; and it would not be the work of a day to remove the prejudice that our stimulus and encouragement and cultivation of the opium traffic through all these years has caused, making it reasonable for them to suppose that we are not their friends.

427. (*Chairman*.) Does the past history of our relations with China and the wars we have fought, the battles that we have won, and the Treaties that we have imposed upon them; do these considerations, apart from the opium question, explain to some extent that kind of feeling which you say is entertained by the Chinese in regard to their relations with Great Britain?—They might; but when, in the native mind, at any rate, whether rightly or wrongly, there is added to that that the wars have been fought to introduce opium, and that the opium has been the thing of all our manufactures and imports that we have been most eager to protect and push—when you add to what would otherwise still remain, the idea that this was at the bottom and behind it all—of course there is a very serious difficulty. If we could wash our hands of the whole thing, it is not yet beyond the limits of possibility that China might be able to suppress the home cultivation of opium to a very large extent, if not absolutely; and it is a very sad thing if we do not give them every opportunity of trying to do it.

428. (*Sir James Lyall*.) Do you think that if the Indian Government stopped the export of opium from India to China, the Chinese Government would stop the import of Persian opium. There would be a great demand, you know, then?—I really have nothing beyond what would be a mere opinion to say with regard to that.

429. Your opinion is that they would, or have you no opinion?—I should rather think that they would try to stop the introduction of all foreign opium, and to lessen the home cultivation of opium, and

gradually to stamp it out; but opinions, I need not say, are not always correct. I have not a doubt in my mind that if a few years ago we had removed all pressure, the Chinese would never have allowed the culti-

vation to have reached the point it has, and would have stopped it; whether they can do it now or not, I would not venture to say. We ought to give them a chance to try.

Rev.
H. Taylor
9 Sept. 1893.

The witness withdrew.

The Rev. CHRISTOPHER FENN, M.A., called in and examined.

Rev. C. Fenn
M.A.

430. (*Chairman.*) You are, I understand, one of the secretaries of the Church Missionary Society and have been for many years past in charge of the correspondence with the Society's missionaries in China?—Yes, my Lord, I have been secretary since 1864, and have had charge of the China correspondence for the last 12 years.

431. How many missionaries are now at work in connexion with your society in China, and in what provinces do they labour?—We have at the present time 66 European missionaries (29 clergymen, 6 medical men, 5 other laymen, and 26 unmarried ladies) besides the wives of missionaries. Of these, 28 have been connected with the Mission five years, and more. Of these 28 missionaries, 3 are in the Kwan-tung province, 9 in the Fuh-kien province, 14 in the Cheh-kiang province, 1 at Shanghai, and 1 in the interior province of Sz-chuen.

432. Can you give us the opinions of some of your most experienced missionaries as to the effects of opium consumption upon the people of China, physically, mentally, and morally?—Archdeacon Moule, who has been a missionary in China for 32 years, wrote in 1891 as follows:—"I doubt whether you would find a 'single father or mother in China who would regard their children's addiction to opium-smoking, even in a moderate degree, as anything but a cause for shame and most grave apprehension. Listen to a heathen Chinaman's dying command to his children: 'Touch not opium. If you smoke the drug, you may worship me after my death, you may tend and beautify my tomb, you may perform all funeral and ancestral rites; but I shall take no pleasure in what you do, and calamity will overtake yourself and your family. If, on the other hand, you abhor and renounce opium, I can well overlook and pardon negligence as to my tomb, the sacrifices and offerings.'" At a meeting in Exeter Hall, in 1882, the same missionary said:—"In the opinion of every respectable and moral person in China whose opinion is worth having it is a vice, and nothing but a vice, to touch the opium pipe at all, whether in moderation or excess. In the case of alcohol, intoxication is the exception. In the case of opium-smoking, it is the rule and the object." At the same meeting, the Rev. W. H. Collins, who had been a Church Missionary Society's missionary in China for many years, and who, before ordination, had been a medical man, said:—"Nothing can possibly be harder to abandon than the habit of opium-smoking. [In this respect] the habit of drinking cannot compare with it." Bishop Moule, who went out to China in 1857, and is there now, wrote in 1891:—"Opium smoking and swallowing is very prevalent indeed among all classes down to the lowest. [But yet] a shopman, a clerk in all the middle and lower walks of trade, has a black mark set against his name [by his countrymen] if he takes his pipe. Any movement against the use of strong drink originates with the European missionary. But it is his Chinese flock and assistant preachers who warn him that it is not safe to receive an inquirer if there is any suspicion of his smoking opium." Archdeacon Wolfe, of Fuh-kien, referring to villages where opium-smoking is much practised, wrote in 1883:—"The pernicious results of this soul and body destroying vice are apparent all round. Cadaverous-looking faces meet one on every side, and the slovenly habits and filthy appearance of the people generally testify too plainly to the evil it is working on this once industrious and energetic population. Almost the entire population in some places is abandoned to the use of this poisonous drug. The effects are witnessed in the extreme poverty of the people, in the broken-down and dilapidated dwellings all through the villages, and in the gross immorality which prevails among the inhabitants." Lastly, Dr. Duncan Main, the very able head of the Mission Hospital at Hang-Chow, has remarked quite recently:—"Opium-smoking is admitted by all to be a vice; nothing can be said in its favour. It destroys the health and

"shortens life, for an opium-smoker falls an easy prey to disease; and it leads to crime and ruin. When anyone says the Chinese can smoke opium with impunity, he talks pure and undiluted nonsense." I have inquired of several of our missionaries, and they assure me that the above opinions are held by them all unanimously. As regards the physical effect of opium-smoking, it does not so much generate any particular disease, but, if not checked, it utterly ruins the bodily constitution.

433. Have you ever been in China yourself?—No, I have not.

434-5. What do your missionaries tell you is their experience with reference to the action of the British Government with the opium trade. Do they consider that it operates as a barrier to the reception of Christianity by the Chinese?—I wrote these remarks at home yesterday; at first sight they may seem to differ from what has been said this morning, but I do not think they do really so much. My answer is this:—Yes, very distinctly; but not so much in the way that is commonly supposed. It may be doubted whether the net result is to prejudice the Chinese against the missionary personally. The prejudice against him as an Englishman is often more than counterbalanced by the satisfaction which they feel on seeing that in this respect he protests against the conduct of his own Government. Archdeacon Wolfe on one occasion gained a friendly reception in a previously hostile town simply through having, accidentally, as it were, shown his strong feeling on the subject. But it is a barrier, nevertheless. The success of the Christian missionary depends on his being able to appeal to the conscience of his hearers; and it is exactly this moral sense which is destroyed by opium smoking. "Humanly speaking," remarks Archdeacon Wolfe, "opium smokers are beyond the reach of conversion, as the vice unfits them for the perception of any moral or spiritual truth." Of course there is a large part of the population untouched as yet by this vice; and as a matter of fact Fuh-kien, where the Archdeacon labours, is one of the most successful of our Missions. Our missionaries long and sigh and cry for the suppression of opium smoking, not because they are propagandists, but because they are philanthropists, and because they see the misery caused by it.

436. You have, I believe, recently endeavoured to ascertain whether the Chinese authorities would be induced to make use of the right conferred on them by the "Additional Article" of 1855 to increase the duty on Indian opium to a prohibitive point, steps being taken at the same time to suppress or limit the growth of opium in China. Will you state the results of this effort?—I was led to ask one or two of our missionaries whether the Chinese could not be stirred up to make representations to their own Government on the subject. One of them, the Rev. J. S. Collins of Nangwa, in North-west Fuh-kien, replied on the 30th March last as follows:—"I lost no time in consulting those most likely to know the usual mode of obtaining such an expression of popular opinion as would correspond to a petition to the Throne with us at home. Having learned that the proper course would be for the mandarin governing the district to issue a proclamation desiring the local gentry assembled in their local council to send him an expression of opinion which he might forward to his superiors, I took an opportunity yesterday to lay the matter before one of the Kien-ning (or Kyong-ning) city mandarins. There was no mistaking his interest in the cause. We explained carefully what you suggested, namely, raising the tax on imported opium, but he smiled and said, that no matter how high the tax was, if people wanted it, some way would be found of smuggling opium into China. No one who knows the [state of things here] can doubt this. He said most emphatically, 'England must move first, England must move first,' and then he added with a meaning smile, 'but your Queen would not be willing to allow so profitable a trade to be stopped';

Rev. C. Fenn,
M.A.
9 Sept. 1893.

"neither would he believe a word in contradiction of that idea. The fact is that until the opium traffic with India is stopped, the natives will not believe a word we say as to England not being willing to force opium on China by another opium war. The mandarin in question neither smokes opium himself nor allows anyone among his retinue to smoke it." I would only remark on the above that, while we in England feel sure that England will never attempt by war, or threat of war, to force the admission of opium into China, the Chinese are well aware that almost every British official in China would do his utmost to prevent its exclusion, and that the exclusion could not be effected without giving offence to these officials. On the other hand, when once the British Government has forbidden the export of Indian opium, every such official will promptly become an anti-opium man, because he will desire to push, in opposition to the use of opium, the use of other articles imported from British India and the British Isles. There seems no doubt, therefore, that such a change of policy would immensely promote the suppression of opium-smoking in China.

437. Does it at all occur to you that your missionaries might do a good deal to counteract this, as I think, erroneous impression which exists in China with reference to the attitude which would now be taken by the British Government on this opium question. Could they not do a great deal by making public such an authoritative statement as has recently been made in the House of Commons by Sir James Fergusson on the subject. You are aware, of course, to what I am alluding?—Oh, perfectly aware; I should hope that they might be able to do something in that way, but still you see here the attempt was *bonâ fide* made. Mr. Collins is a missionary there; he can speak the Chinese language well; he is on friendly terms with this mandarin; he did his utmost to persuade him, but he totally failed; and I am afraid that if an intelligent mandarin could not be convinced by a missionary who was almost closeted with him, or at least close to him, it would be very difficult indeed for missionaries generally to persuade the Chinese public.

438. Well, we know that new ideas permeate but slowly through public opinion, even in such a country as our own. And we must recognise that the Chinese, looking back to past history, may be sensible that we have taken warlike measures in times past to force the opium trade upon China, and it may be a work of time to establish a contrary view; but still do you not think that the Government of this country has gone a long way in instructing Sir James Fergusson to make the declaration, which he did make, that "never again would a shot be fired by England to force the opium upon China"?—I think that is so. One might hope that as years passed away continued effort might produce some result in the desired direction; but that would be a very slow process which would be immensely accelerated by the measure of stopping the export of opium from India to China; and as every year now is hurrying its millions away into moral and mental and physical ruin, it seems a thing to be extremely lamented and deplored, that we should not take steps which would accelerate its suppression.

439. It is the case, is it not, that in so far as the Indian Government takes any action whatever with reference to the trade in opium between India and China it is rather in the direction of restriction, by imposing a very heavy export duty?—It is a Government monopoly.

440. Yes; but I mean the action of the Government in relation to the trade is that of imposing a heavy export duty on the exportation of opium from India to China?—Well, I have not gone into that part of the question so much, but I have certainly read in past years, (and I do not think there is any marked change of policy), that the financial authorities in British India supposed that the best plan financially was to push the production of opium as much as possible, and thus get more exported into China, and thus increase the aggregate return to the revenue. I have no doubt that of late years in consequence of the growing feeling in the House of Commons that would be different.

441. (Sir J. Lyall.) No, it has never been that, I think; it has always been to keep the price up?—Well, I remember reading a remark by Sir John Strachey to the effect that I have just mentioned.

442. (Chairman.) As a practical man, you are compelled to recognise that a considerable change of fiscal policy under such a Government as that of India, must necessarily be gradually adopted. It would not be possible, or it would be extremely difficult, to make a sudden reversal of policy; and therefore, even though you might be hopeful, that at some future time this trade might be further restrained, and perhaps altogether cease, yet an interval must elapse before an entire reversal of policy can take place. In the meantime, does it not occur to you as obvious that something effective might be done by the missionary body, in insisting, perhaps more than they have hitherto done, upon that declaration made by the Government through Sir James Fergusson, to which I have already called your attention?—That was the very point I wrote about urging them to do so. I may say that Mr. Collins was one who has taken it up; but his letter which I have quoted certainly conveyed to my mind the impression that he almost thought it would be useless, that the step he had taken showed it would not be of much good; and Bishop Moule wrote at once and said that he thought that nothing could be done. I think that something could be done but I think the difference is this, that if the British Government in India were to take the step of directing that, Indian opium should be no longer exported to China, it would be an immense help, and would immensely accelerate a process which under any circumstances, would be extremely difficult.

443. We were told last night in the House of Lords by eminent politicians on both sides, that in their view the only thing to be done was to keep pegging away?—Yes.

444. If that is the case with this country, with all its enlightenment and knowledge of political matters, and the wide circulation of an active Press on both sides, I think we must recognise, and the missionaries should recognise, that they must not expect to convey a new view to Chinese minds with reference to the attitude of England on the opium question at once; that there must be a good deal of pegging away on their part, and insistence upon such statements as Sir James Fergusson made, before they can gradually establish in the Chinese mind the true view of the altered attitude of our Government in relation to this question?—I quite agree with your lordship. What I would still say is this,—that under any circumstances, it is immensely difficult; even if at the present moment the export from India to China was stopped, the task would be Herculean, but without that it would be a hundred times more difficult; I quite think that they ought to make every effort in that direction.

445. (Sir J. Lyall.) I quite admit, of course, that nothing would be so effective in convincing the natives of China of the change of policy as an order—prohibiting the export of opium from India to China. Do you recognise that that would cost about 5,000,000, or 6,000,000, sterling a year?—Is it not between 3,000,000, and 4,000,000,?—the nett revenue I think is under 4,000,000, now.

446. More than that?—

447. (Chairman.) It is a serious sum for the Indian Government?—It is a serious sum.

448. (Sir J. Lyall.) For producing an effect upon people's minds that is a very expensive measure?—But I consider that the export of opium from India to China, knowing as we do the immense evils which result from it, is wrong.

449. That is another point?—That is a moral question to which material considerations must give way. As I put it in addressing a meeting at the Exeter Hall the other day, a man says: "I believe that this opium traffic is doing immense injury to China, but I object to its being stopped because it might lead to the necessity, say, of a subvention of 4,000,000, a year," the extreme need from England to India. Now that 4,000,000, a year would be more than made up by twopence added to the income tax—twopence in the pound—a man who says: "I believe it is a great moral injury, I believe it is a crime, but I object to giving it up because it may mean that I shall lose twopence in the pound—a one-hundred-and-twentieth part of my income"—such a man—such a man I cannot understand. I think it is perfectly plain that if we English wish to govern India, and believe that the Indians cannot pay for it, we should pay for it ourselves, not certainly try to make the Chinese pay it by a mode which does them far more harm than if we required them to give us the 4,000,000, a year in cash.

The witness withdrew.

The Rev. GEORGE PIERCY called in and examined.

450. (*Chairman.*) You are, I believe, the founder of the Wesleyan Mission in China?—Yes.

451. Have you spent any considerable portion of time in China yourself?—I was 32 years connected with the mission, from its foundation until the year 1882. Since that time I have been in London looking after the Chinamen who come here, so that I have been connected with the Chinese every month of every year since 1850.

452. In what parts of China did you reside?—At Canton and Hong Kong, in the south of China.

453. We shall be glad to hear what your personal impressions are with reference to the evils resulting from the use of opium among the better class of the Chinese?—I may say, my Lord, that I have heard the evidence that has been given here, yesterday and this morning, the whole of it. Now, I have two points that I should like to lay before the Commission which have not been touched upon, I think, at all. I wish to be as brief as possible, and yet wish to give emphasis to those two special points. The first is a short account of a body of merchants in China, in Canton, who existed under the old *regime* as a very important body of men. There was a time, as all know, when Canton was the only port open to Western commerce in China. During that time there was a body of merchants in Canton upon whom the Chinese Government devolved responsibility as to the conduct of all the trade, giving them the monopoly of importation and exportation. These were termed in those days and the name by which they still go is the Hong merchants. The number was from 12—varying no doubt at different times—from 12 to 18 or 20. In China, as all know, the rulers, the official class, is the highest, and then comes the scholarly class of the Chinese; but in Canton we had what I do not think has ever existed since in any of the ports of China, and what I think cannot exist again—it was before my time I may say—there was a body of merchants who conducted the whole of that trade between all outside nations and China. I wish to say respecting that body of merchants that they were princely men; the wealthiest of the commercial class in China. They were in numbers, I should say, nearer 20 houses than 10; they were men who, according to Chinese customs, had large families. Polygamy is an institution in China, and they were men with large families. Now, the families of this Cohong, as I term them, being the wealthiest, though not the highest in position in China, would be recognised by us Englishmen as being in the category, on account of their wealth, and on account of conducting this monopoly of the trade, of men in eminent position; and their families as the largest, and of course, in some aspects the most respectable and most influential class that existed. What I have to state about them is this: that there were many of the sons of these men—I need not give their names, because those names are rather difficult to English ears; but I may mention two families, as of those two one of them survives to the present time. Those two families were called respectively Puntingkwa and Howkwa. The other merchants had somewhat similar names, their family names, or names of their firms. What I wish to bring before the Commission is this: that of these large families, consisting, some 50 years ago, of many sons and of a host of grandsons—all those families, with the exception of one, are all but extinct; that they are reduced to extreme poverty and distress. The hoards of wealth which their fathers gathered when they held that monopoly, and the property they acquired, and the gardens of pleasure and the palatial residences, all these have gone to wreck and ruin, and there is only the one family of Howkwa left in Canton of those 16 or 18 Cohong merchants. That name may be remembered and known somewhat in England by a certain blend of tea in the old time that was called "Howkwa's mixture." That I have no doubt the ladies appreciated. Now here is a case in point in which there was great wealth, high respectability, position in society, and in which that wealth was bequeathed to sons and to grandchildren; and it has almost entirely disappeared, and disappeared because the sons and the grandsons took opium,—in large quantities,—beginning, of course, with small doses when smoking it, and going on to larger doses, until in some of those families a man was kept to prepare the opium for smoking—to bring it from its raw condition by repeated processes into the state of prepared opium for smoking purposes;

a man was kept on purpose to supply six or eight sons, not merely young men, but middle-aged men, who had the confirmed habit of opium smoking, and this went on until at last these families have been entirely ruined. That seems to me, so far as I have known and so far as I have learned also of the results of the mischief that opium has done in China, to be the most prominent example of the evils wrought among a body of people who were exceedingly well-to-do, and who were also mentally trained and scholarly to a certain degree, at all events.

454. And the example which you quote includes a very considerable number of individuals?—Yes, my Lord, more than a hundred. A great many more than a hundred.

455. And among that total number you would only name one who has been able to resist this course of degradation?—Only one family. The other house that I named Puntingwa's. That house owned large and extensive pleasure gardens in the western suburbs of Canton, and for many many years during my residence in China those gardens were visited by foreigners, by missionary families, and by many wealthy Chinese as beautiful pleasure grounds. Within the last 20 years those gardens have all been destroyed; they have been sold, the buildings have been pulled down, and in connexion with other extensive house property in the western suburbs of Canton all has been scattered to the wind. I know myself of no case in China in which there was so significant a proof of the mischief wrought by opium smoking.

456. And you connect all this which has happened with the loss of energy and with the loss of ability arising out of the consumption in excess of opium?—Yes, my Lord; and there are numbers of other gentlemen, some who are in this country and some who are in China, who would speak to the very letter as to the truth of that to which I have referred—that the sons of these families, with the rare exception of perhaps one or two, were all useless and became more or less abandoned, owing to this evil habit, and their property was entirely scattered as the years rolled by.

457. (*Sir J. Lyall.*) Whenever a commercial monopoly like that for a time gives a certain number of families an enormous advantage over the rest of the public, and raises them to great wealth and then is suddenly broken up as this monopoly was, I believe that the state of those families is apt to decay and to fall into that sort of condition that you describe, although, no doubt, opium was also a very great cause. But I have seen exactly the same thing in other parts of the world, where a family had for some certain reasons possessed a monopoly for a certain time and became through that monopoly very wealthy, and when suddenly that monopoly, for some reason or other, was broken down, they proved unable to support themselves or to carry on industry in an open market?—I can quite readily believe that; in fact, I have some knowledge of great riches, especially when suddenly acquired, almost as suddenly disappearing; but the statements which came to our ears from time to time, and the results which we sometimes actually saw ourselves were such relative to the enormous consumption of opium in those families—not merely by the sons and grandsons but by the servants—as to show that they were given up entirely to the consumption of opium.

458. (*Chairman.*) While you recognise the possible operation of those other influences and the change of circumstances to which Sir James Lyall has alluded, you remain of opinion that in the case of those families to whom you were referring the personal degradation and the personal incapacity of those concerned arising out of the opium habit was the principal cause of their destruction?—That is my own full conviction; and it was also the conviction of all the intelligent friends that I had for many years in Canton.

459. Now what have you known of the use of opium and of its effects among the masses in China?—Most of my life was spent in the city of Canton, but the last two years that I was in China I was resident in a large town, a city you might probably call it, 12 miles from Canton of the name of Fatshán. In China we only give the name "city" to walled cities; this is an unwallied town, but with 400,000 inhabitants. It was an immense place, and we were residing in the outskirts of it. Now in speaking with some of my Christian friends there about opium, I said to one of the most intelligent

Rev.
G. Piercy.
9 Sept. 1893.

Rev.
G. Piercy.
9 Sept. 1893.

among them: "You ought to give us more information about opium than you do," and he said, "but you hardly dare to examine into the great evils it is doing in China, and doing in this place." I said, "I think we dare do it. What is there that we do not know yet that you can make known to us?" "Well," he said, "I can take you to a place in the heart of this great town where you would see opium and the mischief it is working, and especially the stimulus that it is giving to other vices." I replied: "I am ready to be taken there, whenever you will take me." And as soon as I expressed my willingness to go with him, then he seemed desirous to back out of it, and began to say that it would be very dangerous, in fact that it would be perhaps at the risk of some broken limb, or even of our lives if we visited the place. I said to him: "But you have said that we don't know, and are afraid to examine into the full extent of this evil. Now, for one, I am not afraid, and if you will take me, I will go." So he took me. He informed me as we set out, and on our way, that it was a series of buildings surrounding an open square, and that on the one side were opium houses—large places—and on another side that there were gambling houses, and that it was especially from the gambling houses that he feared difficulties. Then at another side of the square there were brothels, and he said: "I am taking you at a time when in all probability there will be less danger than at any other time—certainly much less danger than in the evening or at night. Where I am taking you, you will see the extent of these gambling houses, and some of the people that are in them, but many more will be there at night, and you will see the exterior of the other places." We looked through a series of buildings where there was every arrangement for opium smoking, and where I have no doubt that 300 or 400 persons could be accommodated day after day, and night after night, to take opium. The other buildings of course I did not go into. Into one it would have been improper for me to have gone, and into the other it would not have been worth risking it. I had seen numbers both of small gambling places and innumerable houses in Fatshán where opium is smoked, but this was on a larger scale. We came away, and he was exceedingly glad when we got away without any danger whatever. But that incident impressed me more fully than almost everything that I had seen in China as to the evil working of opium. Congregated in that place there would be from 200 to 400 or 500 men assembled—smoking opium. From this place they went to the other places. I don't say that no other persons went to the other places, but I say that this was a focus of evil; and as we recognise in this country that the public-house and the intoxicating glass is a provocative, and is the source of many evils and leads to a great deal of work

in the police-courts and gaols, and houses of correction, so I found there on a scale that I had not seen in any other place what seemed to me to be the strongest proof that I have had of the mischief that opium smoking was doing among the lower class of the population. That is all I need say on that point. I will add one word, if you will permit me, my Lord: it is this, that whereas occasional speakers against opium and anti-opium agitators, as they have been called, have been spoken of as exaggerating, as immensely exaggerating, the evils of the trade and the evils of smoking, in China; just allow me, my Lord, to say that I believe that it is entirely impossible to exaggerate these evils. I believe it is possible to make great mistakes when we come to figures. When we come to state numbers I think we can be wide of the mark, but as to the total amount of evil done to the opium smoker himself, and the evils which flow from his wrong-doing, to his family, to his relatives, to his friends, I think, a Commission sitting in all the leading cities of China would fail in summing up the total of all the mischief and ruin and death that is wrought by opium in China. I believe, from that point of view that there can be no exaggeration whatever. It is beyond the powers of one, or of one hundred people to gather together, to tabulate, and to estimate the evils that are wrought in China by opium.

460. You have summed up the results of all that experience in China in that concise and powerful statement which of course will have very great weight with the Commission, and I do not know that I can press you to go into details. You have given us, in a comprehensive view, your impression. The Commission is much obliged to you.

461. (*Mr. Pease.*) You have said that you have listened to all the evidence that has been given, and you wished rather to enforce one or two statements; may we understand that you generally approve of the evidence that has been given?—Yes, but I have studiously avoided taking up points which have been brought up before.

462. (*Chairman.*) We are very much obliged to you for your consideration of the necessity of moving forward?—I wish, however, to be permitted to state that almost entirely I agree with the evidence which was given yesterday and this morning also. In many points, if necessary (which it is not), I could corroborate and strengthen that evidence, but I do not consider, myself, that it is necessary to do so. Those two particular points have been raised in my mind since I have been before the Commission, and I challenge any man to overturn the evidence now given as to the entire ruin of the Hong merchants in Canton, during the last 50 years—and in regard to the other point also.

The witness withdrew.

Mr. JOSEPH G. ALEXANDER, LL.B., called in and examined.

463. (*Chairman.*) I believe you are a graduate of the University of London?—A Bachelor of Laws, yes.

464. And a barrister of Lincoln's Inn?—Yes.

465. And you hold the office of secretary to the Society for the Suppression of the Opium Trade?—Yes, I have been secretary for the last four years. I had previously, for about six years, been a member of the executive committee of the society, and had taken a great interest in its work.

466. I believe that you are in the witness' chair this morning chiefly for the purpose of putting in the publications of the society, which shows the various practical proposals which your society has made from time to time, and which it has put forward for dealing with the opium question?—Yes, my Lord, partly arising out of a question or two put by Sir James Lyall yesterday. I thought it might be convenient for the Commission, before it separates, to have before it our Society's views on one or two points which have been opened up, particularly as to the distinction between the Bengal and the Malwa systems.

467. Will you put those papers before us, or will you give us a list of them?—I will just mention them one by one, and mention briefly, too, the points.

468. And you will, no doubt, take care to supply to the members of the Commission (each of them) a copy of those documents?—Yes, my Lord, I have arranged that, and a copy for each member of the Commission

will be forwarded. The first is a book which was connected with the foundation of the society, and was written by my predecessor, the first secretary of the society, the Rev. Storrs Turner. I may mention that it is a very great matter of regret to me that he is unable to give evidence before the Commission; he is only recovering from a very serious illness, otherwise I am sure he would have been most glad to come and speak to some points with which he is much better qualified to deal than I could be. This was an essay written by him in response to an advertisement that was issued by the late Mr. Edward Pease (Sir Joseph and Mr. Arthur Pease's brother) for an Essay on the question of the Opium Trade, in connexion, I think, with its effect on missions in the East. Mr. Turner was one of the prize essayists. He had been a missionary in China for a number of years. His essay led to the formation of the society in the autumn of 1874. There had previously been some committees—a committee in London of which the late General Alexander was honorary secretary,—but they had fallen through. Our society was founded in the autumn of 1874; and Mr. Turner, was appointed the first secretary. He held that position until 1885, shortly after the signing of the Additional Article which I will refer to later. The chapter to which I want specially to refer here is the eighth chapter of his book—the closing chapter—in which, after dealing with the history up to that time, he puts forward propositions for an amended opium policy. I should, perhaps, say that the

Mr. J. G.
Alexander,
LL.B.

society never had any definite constitution. I think one may say that those who united to form it rather were in search of a definite policy which they could suggest, than actually proposed anything upon which they were agreed. In fact, there were those who supported three different measures. There were those who supported the total and immediate suppression of opium except for medicinal use. There were those who were in favour of a gradual suppression, as being what they thought the only practical means of putting it down, and, if possible, with the co-operation of China; and there were also those who favoured the suggestion (which I think was thrown out by Sir James Lyall yesterday) of assimilating the Indian Government's system in Bengal to that which exists already in Bombay, in order that the Indian Government might no longer be a monopolist in the position of actually carrying on the trade, but in the position of regulating the trade and imposing duties, and therefore that such action as they took should be in the nature of repression.

469. (*Sir J. Lyall.*) I did not, as a matter of fact, make any suggestion of that kind.

470. (*Chairman.*) That is a suggestion which has been made.

471. (*Sir J. Lyall.*) Yes, it has been made, but I did not make it.

472. (*Chairman.*) It is a suggestion which has been made?—Sir James hinted at it rather than made it as his own.

473. (*Sir J. Lyall.*) You may have deduced it from some remarks of mine, but I am not conscious of having made such a suggestion.

474. (*Chairman.*) We are conscious of other people having made it?—In this book Mr. Turner did not go for total prohibition. There is a passage at page 205 in which, after referring to the proposal of Sir William Muir, he says:—"Does Sir William Muir's proposition entirely satisfy the demands of justice? We think not. Are we then shut up to Sir R. Temple's *reductio ad absurdum* of total prohibition? Again we think not. Justice and morality demand that the Government should withdraw altogether from encouragement to the opium manufacture; and, if it takes revenue at all, take only that amount which accrues from taxation honestly meant to have a restrictive force." That modified view was the view that was put forward in this prize essay.

475. What date was that?—In 1874. Sir William Muir's proposal had been made in 1868, and I will just lay on the table, if you will allow me, a publication of the society entitled "Sir William Muir's Minute and other Extracts from Papers published by the Calcutta Government." Sir William Muir's proposition was the adoption of the Bombay system of imposing a tax in Bengal in lieu of the monopoly, and I should like to call attention to the principal reply to that proposal of Sir William Muir's. It is at page 13 of this tract. It is a short Minute signed with the initials "H.S.M." Of course that is the late Sir Henry Maine. He says:—"The true moral wrong, if wrong there be, consists in selling opium to the Chinese, and the only way to abate it would be absolutely to prohibit the cultivation of the poppy in British India, and to prevent the exportation of opium from the native States. The British Government is sufficiently despotic to effect this, and for moral purposes there is no distinction between what a despotic Government does itself, and what it permits its subjects to do. I am satisfied that Sir W. Muir's policy would greatly add to the supposed moral wrong by largely increasing the quantity of opium introduced into China, while the revenues of India would be seriously diminished. I would not, therefore, base any action on his Minute." I think I had better not attempt to argue the question now, but simply put this in as narrative. I do not wish to commit myself to agreeing entirely with the statement that there is no distinction whatever; but I will only say that the society has since repudiated Sir William Muir's plan as an unsatisfactory one.

476. (*Sir J. Lyall.*) You used the word "encouragement." You can hardly say that the word "encouragement" applies to the Bombay system?—Well, not of late years.

477. I mean to say the system itself, which is a system of levying a heavy duty, is not encouragement surely; not interfering in other ways except levying a heavy duty?—The system itself is not, I quite grant. I believe,

however, that in the very early days the system was so worked as practically to amount to an encouragement.

478. The Malwa system?—The Malwa system.

479. How?—I am speaking of 50 or 60 years ago, when the Government desired to promote the use of opium, provided it did not go so far as to injure its Bengal monopoly. That was of course rather a delicate operation, but that appears to have been the desire at that time. Then the next document I will put in is an address to Mr. Gladstone when he was Prime Minister, which was referred to by Sir Joseph Pease. It will be observed that the great object urged upon the Government in that memorial is the ratification of the Chefoo Convention, and that really became the main subject of the society's efforts for a number of years. Dr. Maxwell, I think, mentioned yesterday that there were nine years of negotiation on the Chefoo Convention before it was finally ratified under the Additional Article of 1885. During those nine years the society was constantly agitating for ratification, and there was a very strong feeling as to the injustice that was being done to China by not allowing her to have her own way, and by not ratifying the Opium Clause of the Chefoo Convention. It was towards the close of that period that an important meeting was held at the Mansion House in connexion with our society, and that that memorial, signed by a great many influential men, was presented.

480-81. (*Chairman.*) This is under what date—this letter to Mr. Gladstone?—The date is 1882.

482. I may take it that this communication to Mr. Gladstone was an embodiment of the view entertained by your association at that time on the subject?—Yes, my Lord.

483. And that the signatures (which are numerous and highly influential) to this document are a sort of gauge of the movement of public opinion on this subject at the time?—Yes.

484. I think it is a very important document, and I think it would be well that it should be printed as part of the Appendix to our Report?—Yes.

485. So that it might go forward among other papers to the Indian Government for consideration?—We have copies. Perhaps I ought to point out that that really dealt with a point which is now passed over. At that time the negotiations with China, which issued in the Additional Article of 1885, were still pending.

486. Yes, but I think it still is of living importance. Would that not be your view—that this still has importance as showing the growth of public opinion in regard to this question in Great Britain?—Well, my Lord, I am anxious not to attach too high an importance to it—because it was dealing with a phase which has passed away, and probably some of those who signed under the conditions that then existed would not afterwards have signed such a memorial when they considered that China had her own terms and had been satisfied.

487. I will not further press the suggestion that it should be printed as part of our Blue Book?—I am anxious in that respect not to overstate our case. Well, then, it was no doubt under the strong pressure of public opinion that Mr. Gladstone's Government (Lord Granville being Foreign Secretary) finally accepted the terms proposed by the Chinese Government—terms, as Dr. Maxwell said yesterday, which were modified as compared with those that they had originally put forward, but they were the ultimate terms of the Chinese Government, which Lord Granville in principle accepted; and Lord Salisbury, then coming into office, carried out that which had been decided in principle by Lord Granville before. And that caused something like a crisis in our society. There were those who had attached very great importance to the question of not putting pressure upon China, and thought that that phase of the question had passed away, and who were not disposed to continue the agitation, and in consequence a conference of the members of the society was held, at which I was present, and that conference ultimately adopted a new programme, which is the next document which I will put before the Commission, viz., a "Statement of Facts and Principles." In that document the society took the view (although there were dissentients from that view) that a portion of our case as regards the forcing of China must very much be dropped, but that the Bengal monopoly was absolutely indefensible (that will be found in the closing paragraphs); that the

Mr. J. G.
Alexander,
L.L.B.

9 Sept. 1893.

Mr. J. G.
Alexander,
LL.B.

9 Sept. 1893.

society should thenceforth direct its efforts to the stoppage of the growth and manufacture in Bengal, leaving the Malwa question in a somewhat undecided state, concentrating attention on the question of the suppression of the Bengal monopoly. And we have worked on those lines ever since. Then the next document I put in is not actually a publication of the society. I hand it to the Commissioners as being by far the best and clearest statement of the general history of the opium trade, and it is rather interesting as having been a prize essay which was written (as the writer says in his preface) by one who approached the subject with a prejudice against the anti-opium movement, but whose study of the facts, and of the history of the case entirely convinced him. So that really, although written entirely independently of our society, it is a very able statement of our case. The book is entitled "The Indo-Chinese Opium Trade"; by Mr. J. Spencer Hill.

488. Shall we be supplied with copies of that?—I will send them round to each of the Commissioners. In addition to a very clear statement of the history, and a discussion of the morality, of the question, it contains rather a specially valuable chapter on the effect of the opium trade on British commerce with China in general.

489. Would you say that your society, as a body, would adopt and subscribe to the views which are contained in this publication of Mr. Hill's?—Yes, my Lord, certainly.

490. You would like the Commission to consider that that is part of the evidence which you have to offer in support of your case, for the consideration of the Commissioners?—I should be very glad to do so, my Lord.

491. We will take care to make ourselves acquainted with that book, and to consider it. It will be present in our minds in the consideration of our Report?—Then, to turn to a somewhat different point, the question of opium in India. Up to that time our society had almost exclusively turned its attention to the evils of opium in China, and the very name of our organ, the "Friend of China," shows that that has always been our prominent view. We have, however, had our attention turned to the question of opium in Burmah, and I will present one of our tracts dealing with that special subject. It is rather an old one, and the latter part of it is simply excerpts from Sir Charles Aitchison's memorandum, which you already have before you, but it contains, in the earlier pages, some introductory matter, taken mainly from the evidence before the House of Commons' Committee on Indian Finance, which may be useful as an introduction to Sir Charles Aitchison's memorandum. It was shortly after I became secretary, four years ago, that our attention was called to the reports of Mr. Caine, M.P., and others of what they had seen of the evils of opium in India itself, and we thought that the reports were such that we ought to call the attention of the Indian Government to the matter. We embodied the evidence which we

had received, together with facts collected from the Indian Government's own Blue Books, in an Address to Lord Cross. That memorial to Lord Cross will be found at the close of this Blue Book, on the "Consumption of Opium in India," which is in fact a reply to it. Sir Joseph Pease has put in the letter that he wrote to Lord Cross commenting on those despatches, and I now present another memorial to Lord Cross which is the official reply of the society to the despatches of the Indian Government.

492. This paper to which you have referred is in the Blue Book, I suppose. Of course, in drawing up our Report, we shall be called upon to consider ourselves in possession of any information which has been already presented to Parliament in previous Blue Books—it will be our duty to take that into consideration as part of the case?—No. The original memorial to Lord Cross is in the Blue Book, as I have said, but this reply has never been published in any Blue Book. And then, my Lord, after the last general election, we presented another memorial to Lord Kimberley, in which we stated our case fully. We had reason to hope, from the votes given by members of the Government during the last Parliament, and from a speech made by Mr. Gladstone during the General Election, that the present Government very much shared our views; and therefore we put our case before Lord Kimberley, putting before him definitely and clearly our proposals, on the different questions arising out of the trade. Therefore that may be treated as the latest official exposition of the society's views on the whole question.

493. And that, perhaps, it would be well to print in our Minutes?—I think so, my Lord.

494-5. Has it been sent to the Government of India?—It was addressed to Lord Cross as Secretary of State for India, and no doubt he has sent it to India.

496. (Chairman.) I think this letter which you addressed to Lord Kimberley should be printed with our proceedings; it would cover the whole ground, would it not, up to the present time?—Yes, my Lord, I think so. It is perhaps hardly worth while to publish the reply to Lord Cross, but the last memorial to Lord Kimberley does express our present views.

497. It is the position you take to-day?—It is. And then the only other paper is a pamphlet of my own, on the revenue question "Substitutes for the Opium Revenue." I may say that I put that in with great diffidence, feeling that I have not Sir Joseph Pease's qualifications for discussing financial affairs. I think it will be found that there are no suggestions in the pamphlet with regard to Indian revenue which have not been adopted from more or less authoritative sources, that is to say, from the writings of men who are eminent in connexion with Indian affairs. Perhaps I may reserve my evidence on other points. I merely wished this morning to put in these documents at this stage.

The witness withdrew.

Adjourned till Wednesday next at 11 a.m.

At the House of Lords, Westminster, S.W.

THIRD DAY.

Wednesday, 13th September 1893.

PRESENT :

THE RIGHT HONOURABLE LORD BRASSEY, K.C.B. (CHAIRMAN, PRESIDING).

SIR JAMES B. LYALL, G.C.I.E.
SIR WILLIAM ROBERTS, M.D.

MR. R. G. C. MOWBRAY, M.P.
MR. ARTHUR PEASE.

SIR CHARLES E. BERNARD, K.C.S.I.,
Acting Secretary.

Mr. BENJAMIN BROOMHALL, General Secretary of the China Inland Mission, called in and examined.

498. (Chairman.) Mr. Broomhall, you are, I believe, the General Secretary of the China Inland Mission?—I am.

499. Will you tell us in what parts of China the work of the China Inland Mission is carried on?—It is carried on in the provinces of Yun-nan, Kwei-chau, Si-

Mr. B.
Broomhall.

13 Sept. 1893.

chuen, Kan-suh, Shen-si, Shan-si, Chih-li, Shan-tung, Gan-hwuy, Ho-nan, Hu-peh, Cheh-kiang, Kiang-si and Kiang-su. It may be helpful possibly to members of the Commission if they have a map—the red names on which indicate the stations of the Mission, showing that they are scattered all over China.

500. Have you resided yourself in China?—No.

501. Will you tell us in what way the effects of opium smoking have been brought before you?—By communications from missionaries in China, and by personal statements from missionaries who have been home on furlough.

502. Will you give us your impressions generally, as formed from these communications, with reference to the effects of opium smoking?—The information that I have from time to time received and obtained has left upon my mind the profound conviction that opium smoking in its effects—physically, morally, and socially—is one of the most awful vices that ever afflicted the world. Second: that our encouragement of the opium trade has been in its results—commercially, politically, and morally—one of the greatest blunders, and one of the greatest crimes ever committed by any nation. Third: that the rapid extension in China during recent years of the growth of the poppy, and of the habit of opium smoking, threatens the very existence of the Empire. Fourth: that there is absolutely no hope for any effective check to the rapid increase of opium smoking in China, while the export of our Indian opium is continued; and Fifth: that the habit of opium smoking is one of the greatest, if not the greatest hindrance to the work of Christian Missionaries in China.

503. Well, now you have given us your general view and the impressions that you have formed from the correspondence that you have received as a whole; have you any further evidence to give distinguishing the reports according to the provinces from which they are received?—I propose to put before your Lordship and the Commission, testimonies received from the various provinces of China, to some extent selecting only portions which bear upon several points already alluded to. I may say these are extracts from a very voluminous amount of correspondence and testimony.

From Yun-nan, Mr. Curnow writes:—"The ravages of opium in this remote quarter are very great. I suppose little or no Indian opium finds its way here. The Hunanese come here in large numbers and take away the native-grown opium to be mixed with the imported opium, further east. *Nearly every house keeps it as a common requisite.* A most horrible development of the evil is the constancy with which the opium pipe is offered you in the homes of the people as a matter of courtesy. Under the garb of a social "whiff," it is spreading and *sapping the whole superstructure of Society.* No class is exempt. Poor shrivelled wretches by the score may be seen on the streets getting a coin where they can to purchase opium. *China is being whirled to its ruin by a means more subtle and ferocious than any hitherto recorded in the annals or ruins of ancient Empires.* Nothing but the Spirit of the Almighty can stay the plague. I do not believe China is able to save herself. The evil has now grown to such a terrible form that the Government is powerless to arrest it, be it ever so desirous."

From Ta-li-fu, Mr. George William Clarke says that he has had experience both in Yun-nan-fu and Ta-li-fu, an important city, and he says, that in Yun-nan-fu 60 per cent. is the proportion of the adult male population who smoke; in Ta-li-fu about the same. Among the coolies in the provinces 80 per cent. He thinks that in these towns about 15 to 20 per cent. of the women smoke, and the people begin to smoke from the age of 18 to 23. He has seen boys 10 or 12 years of age smoking. Mr. Anderson, writing from Yun-nan, says:—"I have nearly crossed this kingdom at its centre and have had good opportunities of watching this people, on long overland journeys, or protracted boat journeys, resting at native inns, visiting opium dens, visiting the people in their own houses, talking with them in towns and villages, mission halls, hospitals, dispensaries, and opium refuges, and there can be no doubt of the awful injury caused by the opium vice."

504. Have you any other provinces?—From the adjoining province of Kwei-chau Mr. Brompton

writes:—"Opium is grown very largely in this province (Kwei-chau), though in the immediate neighbourhood of this city there is but little cultivated. Opium is the largest source of revenue to Kwei-chau. Kwei-chau opium finds its way to Kwang-si, Kwang-tung, and Hu-nan, in great quantities. Kwei-chau indeed exports little else worth speaking of." And he further says, in answer to the question, "What, in your opinion, is the percentage of the adult male population who smoke?" "Natives of this city (Kwei-yang) whom I have asked the above question answer '50 to 70 per cent. of the adult males smoke.' From my own observations I should judge the latter to be nearer the truth, i.e., 70 per cent."

From the province of Si-chuen, the largest province by far in China, Mr. Paers says:—"Opium smoking as it exists to-day in this prefecture"—he is writing from Sui-fu, in the south-western part of the province—"is one of the greatest foes we, as missionaries, have to contend with. Idolatry is as nothing compared to it. It demoralises all who either smoke or swallow it, to such an extent that they cannot be trusted, neither can their word be relied upon. The evils resulting from this habit are too numerous to mention, and almost every day cases of one description and another come before our notice of its appalling destruction. Amongst the poorer classes its power is far more dreadful than amongst the monied people, as the latter are able to counteract largely the baneful influences of the drug by other things, so that those who only move among the upper classes in China are unable to give a proper estimate of the destruction which the opium causes among the larger proportion of the nation; hence the conflicting reports from time to time we see published." Mr. Frank Trench, writing from Ch'ung-king, the important port of Si-chuen, says:—"My conviction is that opium smoking is an unmitigated evil, and has proved a terrible curse to this land. It has enormously added to the sin and misery of the country, and appears to me to be one of Satan's most powerful methods for the destruction of soul and body of this people. The Chinese, I consider, are perfectly untrustworthy in word, but the effect of smoking opium increases the apparentness of this and every sin many fold. It weakens every physical power before long, and makes a wreck of the man or woman eventually, for certain. When once the craving is excited, they are, so far as I am aware, its complete slaves, and, so far as I know, any method of setting them free is unknown to the natives. They are doomed for life unless foreigners assist them. I do not know whether the Central Government could succeed now in crushing the further growth of the poppy. I fancy that but very very little of the revenue collected as 'li kin' from the native-grown drug ever reaches the Imperial Treasury; it is probably almost entirely engrossed by the provincial officials." He refers to a statement which has appeared in some publications that opium smoking prevailed in Yun-nan for 200 years. He says: "I have visited all the cities but three in that part of Yun-nan lying east of its capital, and, as the result of many inquiries made from the oldest men I sought information from in many villages of the south-east part, the overwhelming and invariable statement made to me was, that previous to some 40 years ago, opium smoking, as we now speak of it, was unknown, in that part of the province at least. When asked how long it had been smoked, the constant reply was about 40 years. When I asked if it had been smoked previous to that date, I was told that here and there it was smoked, but by a very few, that then it was thought disgraceful to smoke it, but it is not thought so now; that when the custom of smoking began to spread, the opium used came from abroad in part. Poppy is now grown to an enormous extent in that part of Yun-nan. The opening of refuges for opium smokers by missionaries in every part of the country would certainly be a very philanthropic action, and would, I have no doubt, be much appreciated by the Chinese; though until Christianity takes a firmer hold on the country, they would probably misunderstand the object of those who established such refuges, and think that they had been sufficiently rewarded by the secret merit which they had been successful in obtaining for themselves. In the absence of decisive action and direction from Peking, I do not think the people or officials are capable of taking measures themselves to open such refuges, or otherwise assist themselves in the matter. I think that refuges

Mr. B.
Broomhall.

13 Sept. 1893.

Mr. B.
Broomhall.
13 Sept. 1893.

"made here might be almost, if not altogether, self-supporting, the rent of the building excluded. One of our most reliable native Christians here thinks that in 80 per cent. of the houses in this city opium is smoked. This exclusive of opium dens." This statement of Mr. Frank Trench's was made 10 years ago.

505. You have now been referring to the province of Si-chuen, have you not?—Yes.

606. That is a province in the extreme west of China?—Yes.

507. And I gathered from what you read to us that the supply of opium for that province is drawn from local sources?—Chiefly grown in the province itself. The population is variously estimated at from 40,000,000 to about 67,000,000; the Statesman's Year Book gives it at 67,000,000.

508. Now you go to the province of Kan-suh?—From Kan-suh, Mr. George Parker writes: "The most respectable families are brought to abject poverty, and degradation by opium smoking. The poor are kept continually in rags through it. Children go naked and starve because the parents smoke opium. Wives sit on the bed-place crying with the cold because their husbands have pawned their clothes to get opium. In cases of sickness remedies fail because of the counteracting influence of opium. British officials and merchants only come in contact with their well-to-do compradors, servants, and tradesmen, who, by faring sumptuously, show less of the evil effects in their bodies and minds, than their less fortunate countrymen. It is the poor who suffer the pain; the indigestion; who feel melancholy; who hate their very lives. The commonest acts of Christian charity are frustrated in their purpose because opium must be had, and the pawnshop is near." Mr. Parker further says: "Opium smoking is a hindrance to the evangelist and pastor equally. It produces lethargy and inertness of mind; the requisite attention cannot be secured. The liar, thief, and fornicator, no less given up to the work of the flesh, are mentally on the alert, but the mental torpor and indifference induced by opium become doubly a blind to the mind." He says: "The population of East Kan-suh was almost exterminated in the Mohommedan rebellion. Kingiang-fu had 400 families within its walls when I visited it. The subordinate Cheo and Hien cities had each less than 100 families within their walls, and no suburbs. In answer to my inquiries as to the opium smoking, it was stated how many families had kept out the opium. In each subordinate city the noninfected families were counted on the fingers of one hand. The girls in the fields were pointed to as smokers. It was in this district I received the expressive answer that 'Eleven out of ten smoked opium.' Kingiang-fu was the capital of the ancient Cheo dynasty, and until the rebellion had been the chief granary of Kan-suh. Now the poppy is its only glory." Mr. J. C. Hall, writing from another city of the same province, the city of Si-ning, says:—"I do think England must surely be lying under a curse for her part in the introduction and forcing of opium upon the Chinese. Even here you get it cast in your teeth. 'It comes from England.' The latter end of next month we up in this province (Kan-suh) look forward to with terror, I might almost say, for then the opium is ingathered, and the opium-poisoning cases are almost innumerable in the country just outside the North Gate. We here in China cannot do much more than present plain facts to our friends in England, who with these facts, and the prayers of earnest Christians, and the blessing of God, may rouse up sluggard England to the heinousness of her sins." Mr. Laughton writes from the same province but from the city of Liang-chau: "This is a dreadful place for producing and smoking it. It is worse than either Lan-chau or Si-ning. When we came here first, I did not meet with a man for about three weeks after our arrival who did not take it; and about nine-tenths of the women smoke, and even children."

509. One of the missionaries whose communications you have read to us refers to the season of the ingathering of the opium crop as a period to which he looks forward with great dread?—Yes.

510. I infer from that that the poppy is largely grown in this province?—Very largely grown indeed. I understand that two crops a year are secured in some parts.

511. And being an inland province you would be of the opinion, no doubt, that the main sources of supply are local?—Oh, yes; it is the North-Western province of China, and I should presume that scarcely any opium whatever, except native-grown opium, ever reaches that province. But I may be permitted to add one more testimony from Kan-suh, from Mr. Hunt, who writes from Ts'in-chau: "As a missionary labouring a great distance from any of the Treaty ports, and doing a good deal of medical work amongst the people, I would like, in as few words as possible, to give my testimony as to the woful effects of the drug, and the hindrance it undoubtedly is to the spreading of God's truth. This testimony is founded on my own careful observation, as I have during 10 years gone in and out amongst this benighted people. The opium is known here, as in most parts of China, by the name 'Foreign Tobacco' (or Foreign Smoke), so that our name is inseparably connected with the curse. In the city quite 70 per cent. of the men are smokers, of whom the greater half cannot afford the indulgence. This means a misery in the latter case, equal or worse than equal to that in the homes of confirmed drunkards in England. Of the women in the city about 10 per cent. are smokers. In the country smoking is less common among both sexes; we might safely estimate it at 40 and 5 per cent. respectively."

512. (Sir J. Lyall.) Foreign opium, the opium imported from India, is supposed to be of a better quality and fetches, therefore, a higher price, does it not, than the native product?—It is assumed to be of a better quality.

513. And therefore, presumably, of a higher price?—Because of the greater skill in its manufacture.

514. Of a higher quality, and therefore of a higher price?—Oh, a much higher price. The difference is very disproportionate indeed as to cost; but the Indian opium, the general testimony is, is worse in its effects upon the people than the native grown.

515. It is possible that some of the cases containing the native opium might be labelled wrongly "Foreign"?—No doubt, for purposes of gain, it will often be sold as foreign opium.*

516. (Chairman.) Now we turn to the province of Shen-si?—From the province of Shen-si, Mr. Easton writes: "The evil results are apparent on every hand. Sad and sickening are some of the cases one has met with, but they are so common that they slip from the memory as an ordinary affair. At present we have an old woman, living in our house, aged 70; she is respectable, and has been well-to-do; she has three married sons, all, I think, over 30 years of age. Two of them and one of their wives are amongst the most inveterate and despicable opium smokers in the city. They have ruined the family, sold everything, even to the garments off the poor old woman's back, and the bedstead from under her, and left her on the floor to starve. Two years ago Miss Fausset discovered her in this condition, and as she dared not give her cash, she daily sent her cooked food. She is now in our house doing little odd jobs of needle-work for her food; we have sometimes given her a garment; but her sons, who watch her constantly, got it from her within a few days. This is a sample of what is very common here." He says that native-grown opium is chiefly used; in fact, he says: "All native. I have never seen foreign opium; the natives in these provinces do not know it. The majority do not know that foreign opium is still brought to China; they regard our guilt as consisting in first introducing it. It is, however, always called 'Foreign smoke.' Mr. Easton, says further: "This is a great opium-producing district; the quantity grown is enormous. The whole population suffers much; wheat, oil-seed, and beans being so little grown as to make them dear. Dealers come from all parts to buy opium, bringing silver for the purpose. This influx of silver depreciates the value, and the exchange becomes very low, seriously affecting ourselves as well as many natives; a tael fetching about 200 cash less than usual, say 3s. 2d., instead of 3s. 10d.," and he says, "Ignorance is the only excuse one can find for the Europeans who pretend to defend it."

* The witness desires to state that cases or chests of native opium could not be sold as "foreign." The Bengal opium ball is beautifully made, and many years ago a London opium merchant in showing him one, said that the outer covering or shell could not be imitated in China. Small quantities of the native opium when in the condition ready for immediate use might in some cases be sold as foreign, and this was what the witness meant by his answer.

517. You have now dealt with the province of Shen-si?—Yes.

518. Do you know at all from what sources the demand for opium is supplied in that province?—From Mr. Easton's testimony, and he is at a point where he would be likely to know, he says, that the Indian opium is not even known in that province.

519. What is your next province?—The next province is Shan-si. I have a statement from Mr. Hoste, who is the son of Major-General Hoste. He says that "Native tracts are occasionally issued by individuals against the use of opium. Last winter some were being sold in this city. I enclose translations of four, with the originals of three." I may possibly later on be allowed to read one of them, but this is one of the opium tracts circulated in the district, of which he has sent me a translation. (*Tract put in.*) He says that "opium is grown in this neighbourhood on irrigated land. As a rule, about three-fourths of the land is grown with opium." In answer to the question, "Do the officials prohibit the cultivation of opium?" "In what way and with what result?" He says: "Occasionally a man of more than ordinary goodness and force of character may enforce, rigorously and effectually, the prohibition of it. Till within three or four years proclamations forbidding the cultivation of opium were annually put up, but were simply a dead letter. Now the cultivation is legalised, and a heavy duty of over 3 dollars an acre is placed upon it; but this does not check the cultivation." He says that only native-grown opium is used in his district. Mr. Bagnall, who has been a missionary for 20 years in China, says, concerning the province of Shan-si, and he has travelled about it very greatly: "The people of Shan-si are historically a quiet, law-abiding people, possessed of good business qualities; but now, through the opium, are becoming in thousands of cases, so reduced both as regards physical strength and energy of mind, that one cannot but be alarmed at what must be the condition of most of them in the early future. . . . The effects are seen in the neglected appearance of the people and property; for many of the finest houses in the cities, and many which might well be termed mansions in the villages on the Tai-yuen plain, are literally crumbling to pieces. . . . In the valley of the Fen river (a very fertile district), the best land is almost entirely given up to the cultivation of the poppy. Travelling on the main road from the south towards Tai-yuen Fu, I stayed at an inn a few miles from the city. During the evening and in the morning I heard children's voices. These I supposed were from the younger members of a family who were travelling. But while the mules were being harnessed, and the many carts were being packed previous to starting, I saw that eight little girls, ranging from seven to twelve years of age, were being placed in a cart. Enquiring about them from a fellow-traveller whose cart stood next to mine, he replied, 'These children have been bought cheaply in Ta-t'ong Fu [a city in the northern part of the province], by the man you see with them, who is going to sell them at T'ai-ku [a city about forty miles from T'ai-yuen Fu] for a high price. This has become very frequent lately, and is what your opium is doing.' By way of explanation he said the people in the north of the province being poorer, the opium habit reduced the victims to extremities more rapidly, and that selling their daughters was one resource to get money in order to procure the drug."

520. What was the name of this last province?—The province of Shan-si.

521. So far as you know, the main source of supply of opium in that province would be local?—Very much so. I have had a daughter, in fact, two daughters residing in that province, and a son, and the opium growing from their testimony as well as that of others, is very extensive—it is ruining the province.

522. And you would hold that both the central and the provincial governments of China were largely to blame in this matter?—Distinctly so; but there are in some of these parts attempts, every now and then, to destroy the opium, and when "the runners" are coming there is everything done to divert their attention from parts where it is being grown, and, in fact, where they have been destroying it the people have said: "Kill us, kill us," because they would rather suffer injury themselves than lose their money by the destruction of the opium crop.

523. What is the next province that you deal with?—The province of Gan-hwuy, one of the central provinces. This is from one of the most careful and most reliable men for accuracy that we could give any statement from—Mr. Cooper, of Gan-king. He says: "A fearful case was brought under my notice the other day, which I am assured by the natives is of no uncommon occurrence. A man, formerly in business as an engraver, through opium smoking eventually became lazy, and lost all his business; one article after another was sold, until he had nothing left but his wife: instead of selling her—which is frequently done—he did far worse." I read this to your Lordship and the Commission: it is a statement we could not make public. He says: "Instead of selling his wife, he did far worse, viz., invited his opium-smoking friends who had money to his house, where he encouraged them to commit adultery right before his eyes, in return for which he received sufficient money to feed his lust for the opium. Alas! alas!! these cases are too numerous; when opium comes in self-respect and integrity go out. I believe that opium is the greatest curse on the face of the earth to these poor benighted Chinese, who have too little moral strength to refuse the bait so nicely put before them by so-called Christian England."

524. In this particular province have you reason to suppose that the importations from abroad of opium are considerable, or do you imagine that as in the other cases the principal sources of supply are local?—I am not so well able to speak as to that province, but Mr. Marcus Wood is here, who has lived in that province, and will be able to give more dependable statements in regard to it than I could. From the same province (though this letter is dated from Kiu-kiang), my son, Marshall Broomhall, who had been living in the province of Gan-hwuy, gives a statement which I think will be worth the attention of the Commission. He says in a letter which I received about a fortnight ago: "The Chinaman's conscience needs no education upon the question of opium. I have never yet met a native who has not acknowledged that opium smoking was a sin. Were any native asked, 'What constitutes a sin?' almost invariably he would answer: 'Profligacy, opium smoking, wine drinking, and gambling.' I would that those who speak lightly of these things could have stood in my shoes a few weeks ago. When speaking to a few natives who were around me, about the Gospel, a gentlemanly Chinaman addressed me. He proved to have been private secretary to one of the Embassies, and had visited England, France, and America. Never before have I been made to feel such real shame for my country, as on that occasion, as for fully two hours he spoke without reserve of what he had seen and knew. The opium trade, and the wars consequent, were the chief subjects of his talk, on which subjects he was thoroughly conversant; having also been to India. He said he had noticed that the opium merchants themselves did not smoke—they knew better—but their greed made them willing to get rich by the ruin of another people. In vain did I endeavour to show that many of our people abhorred the trade. 'Yes,' he said, 'I know all about the Anti-Opium Guild, but what's the good of always talking; why don't you do something.' In concluding he said: 'Now, if the Gospel that you come to preach can accomplish what you profess, then the best thing you can do is to go home and preach it to your own people, for they need it.' What could I say, but acknowledge—as every honest English missionary must do—that to us belongeth shame and confusion of face. This conversation was heard by, and retailed to, over a hundred people. One felt it was no wonder, as he said, that we were hated. These things cannot but be causes of ill-feeling and indignation. It grieves one deeply to meet hundreds who have been cursed, to every one who has been blessed, through contact with the foreigners. The awful habit has gained an incredible hold on this people, and is gaining ground everywhere. In place of the ancient custom of assembling at the tea shops to drink tea over the making of a bargain, or the contracting for coolies or boats, it is not at all uncommon to resort to the opium den instead. In places where one can hardly obtain food, opium can be bought. Last year when going westward (up the River Yangtse) to the city of Chung-king, in Si-chuen, I was often astonished to find where it could be obtained. No matter if the boat stopped in the gorges where only rocks were to

Mr. B.
Broomhall.

13 Sept. 1893.

Mr. B.
Broomhall.

13 Sept. 1893.

"be seen, and where at first sight no house was discernible, the men would go ashore for their pipe, and one would find on some small plot of land a small hut or similar place where opium and wine were to be had. In other places small boats would come and fasten alongside, which proved to be floating opium dens. In many of these small huts and boats there was nothing for sale save the opium and wine."

525. What would your next province be?—Honan. Mr. Coulthard, a nephew of mine, writes from Chaukia-keo, and he says:—"There are about 1,000 opium dens in the cities and towns near here, irrespective of the private arrangements provided in places of business and guest halls, and he thinks the average number who visit each of these dens daily would be 30." He says, "Scarcely any, if any, really foreign opium is used here. Ho-nan opium is very superior; certainly not the tenth of one per cent. used is foreign. During the last two years, owing to the cheapness of flour and millet, cases of cruelty to procure opium have been rarer. Still, cases are known where wives are sold to satisfy the craving, and children sent out to beg to procure the daily supply of opium. Everything available is sold, and in some families it is impossible for any member of the family to keep an article of clothing which is not in wear at the time; all is seized by the voracious consumer to supply the deep craving."

526. Now what is your next province—Cheh-kiang, is it not?—I have with me only a brief note from Cheh-kiang. Mr. Randle writes: "That he had never met a Chinese who had attempted to justify opium smoking; but, on the other hand, *I have met and conversed with hundreds who have both condemned it and deplored it.*" And he also says, "One very evil result of the opium trade with China is that it makes *suicide* so easy; and, alas! so common."

527. Chih-li?—The extract from Chih-li that I propose to read is given by my son Hudson Broomhall, who lived in the city of Huai-luh. It shows the difference between the condition of things now and many years ago. "At Huai-luh (in Chih-li), in 1851, the Mandarin tried to prevent the introduction of opium. It was discovered that an innkeeper had privately provided opium and pipes, and after trial he was convicted. The mandarin gave him the option of a public beating, or the mending of the city north wall; he chose the latter, which cost him 10,000 taels (say 2,500*l.*). While the wall was being repaired, my teacher was born, and received the nick-name 'Sin-cheng' (New Wall), and since has been called Mr. Cheng (Mr. Wall) to distinguish him from his brothers. Opium-smoking is now very common in the city, and there is now no public protest against it."

528. No public protest?—No.

529. Then do you mean by that that the public opinion of the locality is no longer hostile to the introduction and use of opium?—That is so. The incident he mentions as occurring 40 years ago shows what was done at that time to check it, but now it is common and no attempt is made to stop it. And in connection with that same thought I would venture to quote the words of the Reverend Dr. Happer, not of our own mission, who says:—"I can testify from my own observation, during forty-seven years' residence in Canton, to the distressing evils of opium. In the year 1844 the facilities for opium smoking were not seen in any Chinese house. Now the opium couch is seen in nearly every well-furnished house."

530. You have now gone through the evidence, province by province?—Yes.

531. What you wish further to say is of a more general nature, is it not?—I think perhaps it might be permissible to me to say a few words which bear upon the remarks made at the opening, as to the effect of this upon the welfare of the country and as to the rapid extension of the vice.

532. We shall be glad to hear any general statement that you wish to put before us as representing your society?—As showing the effect upon the country as a whole the Reverend William Muirhead, of the London Missionary Society, says: "Opium smoking is rampant in all parts, and is eating out the vitals of the nation." And Dr. Griffith John, of the London Missionary Society, one of the most able men in China, says:—"Opium is not only robbing the Chinese of millions of money year by year, but is actually

destroying them as a people. It undermines the constitution, ruins the health, and shortens the life of the smoker; destroys every domestic happiness and prosperity, and is gradually effecting the physical, mental, and moral deterioration of the nation as a nation." The Reverend E. O. Williams, of the China Inland Mission, writing from Western China, says:—"Oh, that our statesmen in England could see a little of the effects of this poison which we have forced, and are forcing still, upon the Chinese that we may make a little money. The poor Chinese! No wonder they hate the foreigner. How can we ever make amends for the awful wrong we have done them? You come across it at every turn. If you go on a journey very probably your coolies are opium smokers, or your boatman; you see it and smell it in the inns; you come across it everywhere." And as was stated in a leading article in the "Times" some little time ago, "25 years ago, the only marketable opium came from India; but now," it says that "China is no longer compelled to resort to India for its opium. The huge crop of Chinese opium is raised for the supply of scores of millions who never smoked before." And it further says, that "seven-tenths of the adult male population, it is computed, now are opium smokers. Probably 25 years ago only a fraction had contracted the habit. The propensity, which is understood to have a total existence in China of no more than a short century, has of recent years spread like wild-fire among the nation." Dr. Griffith John fears that no legislative measure on the part of the Chinese would put an end to it; but he says, "Be that as it may, our path as a Christian nation is plain enough. We have inflicted a terrible wrong on the people of China, and it is our solemn duty to try and undo it by abandoning the trade at once and for ever ourselves, and by giving them every sympathy and aid in our power in their attempt to banish the curse from within their own borders."

533. This deplorable increase in the consumption of opium in China has, it would appear from the various statements that you have read to us, been chiefly fed by the enormously increased growth of the poppy in China itself?—It has been so.

534. And there has been great laxity on the part of the Imperial and local provincial governments in enforcing the edicts which have been put forth to prohibit or diminish the consumption of opium?—The reason for that has been that money was going out by millions a year; their silver for the Indian opium, and that has caused the authorities to be lax in enforcing their own regulations, which 50 years ago were extremely strict; men were put to death then for selling and smoking it. But another reason, no doubt, which we cannot shut our eyes to, is the fact that it is an opportunity which corrupt officials may take advantage of to accept bribes for allowing the growth in these interior provinces. I have not gone into the state of things in all the provinces because of the time.

535. I think you have given us abundant evidence to show the ill-effects of opium, and to show that the vice widely prevails and is increasingly prevalent in China?—My own conviction is very strong that if this thing goes on for another 50 years as it has gone on for the last 50 years, it will bring China into a most awful condition. From all parts it seems that during the last 40 or 50 years the growth has been immense, and the increase of its use immense. Mr. Morris, a deputation from the Baptist Missionary Society, who visited China more than a year ago, says that "In Shan-si a very intelligent native told me that he thought there would be six or seven opium-smokers out of ten men in the city, while in the country the proportion would not be more than three to ten. He also said that 'when he was a boy—he was nearly 70 years of age—opium was consumed, but that the habit of using it was not a common one, and an opium-smoker was pointed at and talked of as quite an exceptional character. The practice, he told us, had grown up chiefly within the last 30 years.' The increase seems to have been more rapid in recent years. Mr. Faers, writing from Sui-fu in Si-chuen, says:—"The use of opium is favoured by the magistrates. When I came here in 1891 there were under 200 licensed dens, and now the number is doubled, it being an easy and lucrative source of revenue, and the chief magistrate styled it a 'legitimate business.'" Mr. Hunt says: "If Christianity is not received, the demoralization of the Chinese by opium, and the Government of the country by other Powers,

"will be facts to be recorded at no very distant epoch." And that is the impression which many have, the Chinese themselves feel that we are seeking to weaken them as a people, that by-and-bye the country may be taken by other people, and it may be worth mentioning that in last Saturday's "Standard" in the telegraphic tidings from Shanghai, we read:—*"Viceroy Chang, who is notorious for his hatred of foreigners, and for the encouragement he has given to the natives in their barbarous treatment of European visitors, has, it is reported, addressed a petition to the Throne, in which he deliberately advocates the extermination—that is, the massacre—of all foreigners in China, more particularly the English. He contends that this policy is necessary, in order to prevent the eventual partition of the Chinese Empire among the European Powers."* I have never seen that as coming from an official before, though it has been said to our missionaries over and over again, that it is our motive, to weaken them as a people, and by-and-bye to take their country. Archdeacon Wolfe mentions in one of his letters the fact that the American Board of Missions had abandoned a mission station because of the extent to which opium-smoking was practised; he says:—"The degradation of an opium-smoking town is of that peculiar and intensely low and hardened type that, humanly speaking, it seems almost impossible to make any impression of a moral or spiritual nature upon the inhabitants of a place given up to the degrading vice of opium-smoking," and I may, perhaps, in just a few words, give the testimony of three missionaries, to a point which bears out what is a common impression in China. Dr. Galt, formerly in charge of the Church Missionary Society's Opium Hospital, Hang-chow, referring to the fact that the habitual use of opium affects the increase of the population, says:—"I find that only one inhabitant was added to an opium-smoking family during 11 years." In fact, 154 parents, of an average age of 33 years, had only 146 children born to them during 11 years." The Rev. J. McCarthy, of the China Inland Mission, who went right through China from Shanghai to Burmah, says:—"The people assert freely, and believe firmly, that the number of children born to opium smokers is less than to other men, and that it thus tends to reduce the population." The Rev. Dr. Griffith John, of the London Missionary Society, says:—"The Chinese tell us that a large proportion of the regular opium-smokers are childless, and that the children of the others are few, feeble, and sickly." They also affirm that the family of the opium-smoker will be extinct in the third generation." I published a book some 10 years ago, rather more—12 years ago—on "The Truth about Opium Smoking," which I shall be glad to hand to your Lordship. That book contains the testimony of many missionaries, and was published in answer to some statements made by Sir George Birdwood.

536. Would you give us a few more copies—each member of the Commission will be supplied with a copy?—I have a few copies left. It is out of print now, but I will be very happy to supply copies as far as I have them. I referred just now to the native opinion. This is one, and it may be worth while for this to go in evidence as just one of the many tracts published by the natives themselves against opium. Mr. D. E. Hoste explains that "the picture represents one of the opium shops, or dens, common in North China. The owner is weighing out opium for the half-naked wretch at the counter, whilst his assistant in the right foreground works at the bellows and watches the pot in which the raw opium is being prepared. The two half-naked men going out have just bought their ration of opium. They are described by the three characters over their heads, as:—*'Shih hsiang chih,'* or (*'insatiable opium sot'*); and *'chien hsin he'*—(*'reckless spendthrift'*)—whilst on the signboard over their heads are the words—"The medicine of East and West, opium in rolls or 'paste sold here'"—(a polite term for opium). The characters on the right side of the picture are doggerel—to the following effect:—

"There are people who say opium is a rare fine thing—what nonsense! and are continually bragging of their prowess' (in smoking it and selling it). What effrontery and boasting! And even declare that the practice will benefit them. How utterly absurd! As a matter of fact they come to ruin and beggary—That's certain!" The writing below is as follows:—Open a prosperous shop, and drive a roaring trade, in selling native opium, raw and prepared. Lay in

a stock of smoking materials and boil the paste opium all ready, and (you say) you will deal fairly by rich and poor alike and (so you do) for whether they are friends or relations, they all have to pay up ready money. Some buy opium and go, others lie down in your den and smoke there; if they smoke but three or five pipes, don't they enjoy it; and how sparkling they become in their wit and conversation? They sip tea and eat cakes only thinking of present gratification and regardless of future disaster. Though everybody knows it is injurious, people just love it; at first they take a few whiffs to quiet them in sorrow and anxiety, then as the craving lays hold on them, day and night they can't leave the opium pipe. No matter how lusty a fellow you may be it will wither you up; before you were hale and hearty, now (by your opium smoking) seek debility and ill-health; you are under the misery of the craving, we exhort you good people all, not to get snared by opium. Thus your peace and prosperity will be secured. Ten miseries arising from opium smoking:—I. Yellow haggard face, wasted body and debility—(this is what the craving does for you). II. Clothes all tattered and torn—respectability done for. III. Wife and children weeping and in wretchedness. The result of your neglect. IV. Father and Mother, though not ill; dead early. Died of anger and despair. V. Pay no taxes, or duties; Property all sold. VI. For ever lying down, regardless of the place being dry or wet. When the craving comes on. VII. Wandering about in rags and nakedness. An utter outcast. VIII. Begging about the streets. Destitute. IX. A prey to remorse and despair. Too late now to repent. X. Tormented with fears as to the future. Indeed a hopeless look-out." I think perhaps I ought not to add more.

537. You have given us a very full general statement, but we would not ask you to withhold anything that you consider important?—I made a remark that I think there would be no real check to the growth or use of Chinese opium while our Indian opium is exported. I believe that the Chinese Government could save their own country—would make a desperate effort—if their hands were free; but they have no encouragement to do it. In fact everything is on the other side while the Indian opium is sent to China; and we are particularly wishful that the export of opium from India should be stopped as the only thing that will give us any hope whatever of the Chinese authorities being induced to make any effort to check the consumption in their own country. I have to thank the Commission for the patience with which they have listened to me.

538. There are only one or two more questions which I would like to ask you. You have clearly shown the evil which attends the excessive use of opium by the Chinese people so far as it has come under the observation of your numerous body of missionaries; you have shown that so far as your information extends, the greatly increased consumption has been chiefly met by the increase in the cultivation of the poppy in China itself, and your missionaries have in several of the reports that you have quoted, referred to the laxity on the part of the local governments in relation to the enforcement of prohibitions against the use of opium. Well, then you have now referred to the action of the Indian Government. You, of course, quite recognise, do you not, the change that has taken place in the state of public opinion in this country; it is certain, is it not, that a war with China to compel the admission of Indian opium would no longer be sanctioned by public opinion in this country?—No.

539. That is so, is it not?—I believe it would not be sanctioned.

540. Certainly not?—But I believe the Chinese would be afraid to run the risk of it, and they would fear, further, that though a quarrel might not arise out of the opium as avowedly a question of opium, it might come in another way, and if it did not, that there would be a return to the old smuggling habit, so long as we are manufacturing and exporting the Indian opium. The increased consumption of opium, I may be permitted to say, during the last 50 years was not merely from native growth, but up to about 10 years ago there was a steady increase of the amount exported from India. Though it has been reduced in price, it has not been very greatly reduced in quantity during the last 10 years; its value is less, but the quantity has been much the same.

Mr. B. Broomhall.

13 Sept. 1893.

Mr. B.
Broomhall.

13 Sept. 1893.

541. In the earlier part of your statement you alleged that the Government of India gave a direct encouragement to the exportation of opium from India into China. Well, in what way do you consider that the Government of India can be justly said to have encouraged the opium trade?—Many years ago Mr. Julius Jeffrey, F.R.S., of the opium factory at Patna, distinctly pointed out that it was his business to manufacture the opium to meet the Chinese taste.

542. Many years ago that was; but as the trade is at present regulated, how would you say that the Government of India directly gives encouragement to the exportation of opium from India to China?—By the growth and manufacture of the opium for export, and by the monthly sales at Calcutta, which are Government sales, and also by, so far as we can judge, the discouragement of anything which would check the export.

543. (*Sir J. Lyall.*) I gather that the prohibition of the export of Indian opium is urged by most of your missionaries as a striking act of expiation for our guilt in the matter in former years in the wars with China, and as an example and encouragement to the Chinese Government to take measures to stop the habit, but that most missionaries have only a slight hope that the Chinese Government would be now able or willing to take measures to stop the growth and use of the poppy—of opium in China?—It is not viewed in the light of an expiation, but as a matter of moral right, it is not with the view to our past ill-doing, but as a matter of doing right now. But if the Chinese themselves begged us to send the opium, knowing how common its use is there, you ought to refuse to send it.

544. But the latter part of my question was that most missionaries have only a slight hope now that the Chinese Government would be able or willing to take measures to stop the growth and use of the poppy?—Opinions vary; but the testimony generally is that there is very little hope, partly because the officials themselves have become in many cases smokers of opium, and in high quarters too; and further they are now deriving a certain amount of revenue from it themselves. But my hope individually is that, seeing that something must be done if the country is to be saved, they will from patriotic motives be compelled to take action.

545. You know that Sir James Fergusson said in the House of Commons that the Chinese Government at

the present moment can prohibit the import after 12 months' notice. Do you understand that that is the case?—I heard Sir James Fergusson make that statement; but while we are manufacturing the opium in such vast quantities and allowing its export, the Chinese will not pay much attention to that.

546. You put it, upon moral grounds, that we ought not to allow the export for a moment?—Not for a moment.

547. Whether the Chinese Government will take action themselves, or not?—I feel, as Dr. Griffith John put it very powerfully some time ago, that our action should not depend upon anything which the Chinese Government may do. He says: "I cannot close my eyes to the fact that opium smoking in China has become so common and that the habit has such a hold on its victim, that in my most calm and solemn moments I can see no hope except in God. There are millions in China to whom the drug is dearer than life itself. Even if the foreign trade in the drug were given up, it is more than probable that opium smoking, and consequently opium growing, would go on in the provinces. Yun-nan, Kwei-chau, and Szechuen are covered with the poppy every year, whilst in several of the other provinces it is extensively cultivated. The evil is now one of enormous magnitude; and I am inclined to think that no legislative measures on the part of the Chinese Government, however honestly adopted, will put an end to it," and then he said what I stated just now:—"Be that as it may, our path as a Christian nation is plain enough. We have inflicted a terrible wrong on the people of China, and it is our solemn duty to try and undo it by abandoning the trade at once and for ever ourselves, and by giving them every sympathy and aid in our power in their attempt to banish the curse from within their own borders. Would to God it were possible to bring the British Government to see the wicked character of the traffic, and to induce them to sacrifice their opium revenue on the altar of our national Christianity and China's well being."

548. Then you do not look to practical results; you think that whether there are any practical results to be expected or not, it is the duty of the Indian Government to stop the export?—Unquestionably. But I should hope that in view of such action being taken by the Indian Government, it would be a direct encouragement to the Chinese Government to take immediate action, and I believe it would be that.

The witness withdrew.

Mr. GEORGE GRAHAM BROWN called in and examined.

Mr.
G. G. Brown.

549. (*Chairman.*) Are you a member of any University?—I was a private student of Glasgow University, my Lord; but I am not a graduate.

550. You have been a missionary in China?—Yes.

551. How many years have you been labouring in China, and in what districts have you been stationed?—For more than six years and since 1888 in the city of Lan-chau, my Lord. If you will look at the map you will find in the north-west corner the city of Lan-chau, capital of the province of Kan-suh. My testimony is only valuable because of my having been in a somewhat inaccessible district.

552. Will you tell me what is your experience of the district of Lan-chau, as to the effects of opium on the Chinese consumer, whether regarded morally or physically?—Distinctly bad in both ways, my Lord.

553-4. Is there anything you would like to add in any way?—I have made inquiries as to the amount of Indian opium sold in the city. Being a capital city, there is a large number of expectant officials from the south residing there, but only two stores sell Indian opium in that city. The distance from the coast is 2,400 miles, so that of course the price of Indian opium, as compared with the native-grown product, is as ten to one. The cost as ten to one; the strength of Indian opium as eight to one of the China drug.

555. And the proportion in which Indian opium is consumed as compared with the Chinese I suppose is merely fractional?—Absolutely fractional. The point here which I wish to mention to your Lordship and the Commission, is that no Persian opium is known in the city, although a great trade route passes through it. The trade route from Turkestan goes down through

Chinese Turkestan, through the city of Lan-chau, crosses the Yellow River there and goes onwards to the south. The second route passes the province outside of Kan-suh, but I only refer to the first route.

556. What is the distance of the trade route connecting Lan-chau and Persia?—The distance in days from the capital of Chinese Turkestan is 54 days' journey. We do not speak of distances except as by days in Lan-chau. Chinese opium is specially grown in these regions, as it is a famous district. Your Lordship is aware of the great Loess formation that extends over the Steppes of Russia, the fertile earth of which is especially suitable to the production of opium.

557. In Turkestan?—In the district of Lan-chau. I asked an old shopkeeper, a man about 70 years of age, when opium was first smoked in that district. He said less than 50 years ago it was first smoked by a man from Ho-nan; and as my informant graphically explained, the man went into the inner chamber of his inner court yard, and shut the doors and windows. The penalty then was beheading.

558. Has the practice enormously increased since that date?—Yes.

559. Would you give us any details that you wish to put before us?—May I be allowed just to add one word. Upon the authority of this man opium was first cultivated about 30 years ago—30 years before 1891. I hold that the vice has quite overmastered public opinion since then. The common native statement is that eight-tenths or nine-tenths smoke in this city. I am not referring to the outside cities, my Lord, merely the capital city of the province.

560. (*Sir J. Lyall.*) Do you think that that eight-tenths and nine-tenths refer to women and men, or only to men?—I consider myself that it may only be applied to adult men. But I add we consider that six-tenths of the married women smoke. The smoking was stopped about the year 1875 by a man who became famous in two directions. His name was T'so. He was the man who reconquered Chinese-Turkestan, after Yakoob Beg had revolted; and later he became famous in another way, because when the French took Tonkin he petitioned the Emperor that he might take troops into France—possibly your Lordship recollects—to fight against the French on their own ground. This was not accepted; and he died of a broken heart. During his Viceroyalty of the province he stopped the smoking of opium by drastic measures. He took—I merely give the native statement—the men who were habitual offenders, and slit their lips transversely, so that their lips could not close round the opium pipe, and they could not smoke. This had a tremendous effect upon the suicides from opium in the same way.

561. A tremendous effect?—In decreasing the number of suicides from opium.

562. (*Sir W. Roberts.*) But not in decreasing the number of suicides altogether?—Yes, sir. I am sorry to say that, as a native explained to me, they prefer opium to any other form of committing suicide. We asked, "Why do they not jump into the Yellow River?" And the answer was, "Too cold." The opium tax in the year 1891-92, after it was to some extent legalised, in the province was stated to me by a gentleman of the name of Ch'en, who was in charge of one of the Customs barriers, to have amounted to 637 wans of ounces of silver—a wan is 10,000 ounces (=8,960,000 English ounces). This referred to the tax collected on the opium cultivated in the province and exported to the other provinces, because of the extreme cheapness of Kan-suh opium. The price of opium there is equal to nearly 9d. per English ounce. The sale is enormous. I have seen five stalls in one street, within 50 yards from the shops, in addition to little stalls set down on the street.

563. (*Sir J. Lyall.*) Can you tell us how the opium revenue is levied?—I asked, and was not enlightened! I am sorry to say I think that there is a good deal of the proverbial squeeze. It is done very much at the discretion of the mandarins, and their idea is to get as much as possible.

564. (*Chairman.*) We shall be glad to hear anything that you like to tell us regarding the moral effect of opium on consumers?—I have remarked that it has appeared to me to destroy all the moral senses; all other obligations must give way until the craving is satisfied; and I may say that it is necessary to see a man under the influence of an unsatisfied craving before one understands what that means. I once slept on the same brick bed with a man whose craving was unsatisfied. I do not think I shall forget it easily.

565. (*Mr. Pease.*) Perhaps you would describe the man's condition as well as you can?—I am not a medical missionary,—but the whole nervous system seemed to be on extreme tension, and he was really unrestrainable. One could not coerce him by reason; he could listen to nothing. May I mention that opium induces poverty of the district, notwithstanding its very fertile soil—the quality of the soil is decreasing steadily, because of the rotation of crops, which is fixed—vegetables, opium, tobacco—the three in succession; and they make no variation year by year. Grain has to be imported from the neighbouring prefecture, which is principally Mahommedan, being Mahommedans the people there do not smoke opium to the extent that the heathen Chinese do. On the information of a worker in the fields, I found that the rents of the farms were steadily decreasing, although the ground was originally famous for quality. The average return from opium *versus* grain is as 23 to 8; that is to say, the farmer who honestly cultivates his ground and grows grain receives eight ounces of silver as his profit from each Chinese acre of ground. If he cultivates opium he receives 23 ounces; so that is a very strong argument in favour of opium to the Chinese. I further point out that there is practically no reserve of grain in the district, and the people live in constant fear of famine, from the reason that they know, should the crops fail, they have nothing to fall back upon. The previous witness was asked a question as to the gain from growing opium. I believe that it has not, as far as my knowledge extends, resulted in any gain to the Chinese, because the silver received seems to be expended again

in opium, for they become opium smokers themselves through cultivating the plant. (I give that upon the authority of a native graduate of the name of Ch'en.)

On the physical ground, I have noticed the terrible induction of sterility amongst the women. My wife has come across not one or two, but many mothers who smoke during pregnancy avowedly to reduce their trouble in labour. I have also known of women having 8, 10, 13, 14 children. In three of these cases two grew up; in one case only one;—the others died not through infanticide, but because one or both of their parents were exceptional smokers. I have known of one lady who was able to smoke three Chinese ounces of the native opium daily; she had become a sot. In the time of the influenza there were no coffins left in the city—perhaps that is the strongest point as to physical debility which I can lay before your Lordship and the Commission. They had come to the condition where there were not coffins to bury the dead, because of the terrible ravages that influenza made amongst them, and those who did not smoke were, as far as I observed, the ones who came out best from the scourge. At the time of anti-Russian excitement—on the march of 54 days to the capital of Chinese Turkestan,—they raised three Regiments in Lan-chau of 1,200 soldiers each. Out of those 1,200 soldiers the natives expected that about 300 would arrive at Urumtsi, the others would die or desert on the road. The Hu-nan Regiments nominally do not smoke opium, and their officers threw this question in our teeth most bitterly.

566. (*Chairman.*) In Hu-nan?—Yes, the Mandarins in the province of Kan-suh are principally from Hu-nan.

567. In Kan-suh?—Yes, they consider it is necessary to have these Hu-nanese mandarins in order to control the turbulent natives of the province. There are some very quarrelsome districts. A Hu-nan General, of the highest rank, said to me, "It would be a very different thing had you not brought opium when you came to 'preach the Gospel.' Another point that I have to mention is that in the matter of choosing wives, one of the questions now asked is, 'Is she an opium smoker?' A most barbarous practice is the smoking of the opium ash, and one of the reasons adduced for using even the small quantity consumed of Indian opium—that is known as Duty-paying opium—is that they may smoke the ash three times. The Chinese opium may be smoked twice, more usually once. There is a third practice that is depraving the population terribly, and that is eating crude opium. It is prepared in balls, and a smoker just breaks off a little piece and swallows it, in order to allay the craving when he has no time to smoke. I also mention that I procured a supply of morphia in the form of medicine for curing opium, and got into bad odour because this was all bought up by some secretaries in the Viceroy's office for the above purpose; then not having enough to supply their demand, they were displeased at my 'deceiving them.' These were all the points that I wished to say before your Lordships on this question.

568-9. It comes to this, does it not, that your observation during your years of residence in a remote station, has established in your mind the conviction that the practice of opium smoking has largely increased, and that it is most detrimental morally, physically, and materially to the Chinese people?—Yes, my Lord.

570. Then, may I not take it from you that in the district in which you lived the main source of supply was local?—Yes, guarding the statement, by saying that before Indian opium was introduced at the coast, there was no use of opium in the province.

571. Would you say that the local authorities are doing what they ought to do in the enforcement of the edicts which have been promulgated by the Government for restricting or prohibiting the use of opium?—The edicts are certainly posted and proclaimed; they send their officials round the districts, but, if I may say so, it is something like "Satan reproving sin."

572. Were such edicts published and circulated from time to time when you were at Lan-chau?—Yes.

573-4. But no step was taken to enforce obedience?—Not so far as I was aware. Of course it was difficult for a mandarin to enforce obedience to an edict against a sin which he himself commits. I mean he cannot openly do so. Allow me to make a statement with reference to a mandarin under whose jurisdiction my wife lived in a city called Han-chung in the next province. This mandarin was a conspicuously moral and upright man and had the position of sub-prefect. He stopped the growth of opium by very severe

Mr.
G. W. Brown.
13 Sept. 1893.

penalties and grave punishments, even to men of high rank, and in stopping it he incurred such disfavour that at the time of the triennial visit of the Viceroy, 50 petitions were trumped up against him in order to get him put out of his office. This shows the feeling of some, at least, of the Chinese mandarins against opium.

575. Were there any other Europeans resident in that district?—There were one Belgian priest, and for a short space of time about five Russian traders who came from Siberia; in addition to my colleague, who left in the year 1889.

576. What was the demeanour of the people towards you in a general way—friendly?—At first very far from that, my Lord; but eventually we had the exceptional feature in our work of getting amongst the higher classes, and they latterly showed considerable friendliness towards us.

577. Did you receive adequate protection from the first from the Government?—All that we required we received, my Lord. It was not necessary under these circumstances.

578-9. (*Sir J. Lyall.*) What do you think would be the practical results from the opium habit—the vice of opium smoking, if the Government of India were to stop the export of Indian opium?—My candid belief, especially with reference to the mandarins from the Hu-nan province, and they are practically the dominant power in China, is that they would do their utmost to put down the evil.

580. You think they would be encouraged by the example?—I am certain of it, sir.

581. Do you think they would be practically able to carry it out?—If they had the free hand that Viceroy T'so had it would be very simply done—I refer to the slitting of the lips.

582. As far as you have seen and know, Indian opium, I gather, is now a luxury of the rich opium smokers in China?—It is more economical to buy the native opium in that district. You must excuse me guarding myself—my evidence only refers to the district under the Prefect of the capital of the district of Kan-suh. Where the strength of native opium is as one to eight of the Indian drug, and the price as one to ten, the advantage is in favour of the native opium.

583. I should think that is rather a doubtful fact, that of the relative strength—one to eight?—It is not, of course, chemically ascertained; but it must mean something very like that, when one lady could smoke three Chinese ounces, nearly four English ounces in a day.

584. But practically Indian opium is now in China, I understand, a luxury of the rich, just as French brandy is a luxury among English spirit drinkers?—Yes; on the same analogy that, if you were to stop the native whiskey and leave the door open for French brandy, there would be difficulty about abstaining from spirits.

585-6. In practical smoking, just as in practical drinking. Indian opium is very much like French brandy is in England at the present moment?—The use of it, as a comparison.

587. Yes?—Not the effects.

588. No, not the effects, the use of it?—In the extreme north-west it is so.

589-90. Supposing spirit drinking is a great evil, do you think it would be incumbent upon the French Government to stop the export of French brandy; would there be any moral obligation?—If I were a member of the French Government I should have no doubt as to my action in this matter, sir.

591. (*Mr. Pease.*) You mentioned that the Indian opium had eight times the strength. Is the dose that is taken one-eighth of the dose that is taken of the Chinese opium?—Yes; that was the experience of the mar of whom I have spoken to-day.

592. (*Mr. Mowbray.*) Do I understand that when this Viceroy disappeared things relapsed at once; that

he had no public opinion behind him in putting down the smoking?—I understand that he had the subordinate officials with him; but the official who followed him as Viceroy was a venial man, and he was bribed. That is merely given upon the statements of the people. I was not present at the time; but the Hu-nan mandarins, as a class, profess themselves distinctly antagonistic to opium.

593. But one Viceroy having shown himself strong enough to put it down, his successors did not carry on the same policy?—No, sir.

594. (*Sir W. Roberts.*) I think I understood you to say that in Lan-chau fully nine-tenths of the adults—the adult men—smoked or used opium?—The native opinion is that eight-tenths or nine-tenths; I consider that that refers to adult men.

595. It is a large city, I presume?—Upon my own calculation it contains about 200,000 souls.

596. And how long has opium been used, do you think, upon that scale?—The growth is increasing every year; they are laying down more land every year.

597. So that the habit is practically a generalised habit in that city?—Unfortunately it is so.

598. Not being a medical man, perhaps, your attention was not called to what I might call the vital statistics, as to the death-rate, or probable death-rate and birth-rate of the towns?—I was at the time we were there under very considerable surveillance on the part of the mandarins, and it was with great difficulty that I secured any reliable statements. On the death-rate and birth-rate it has been impossible for me to secure statistics.

599. In walking about the streets did the population appear decrepit?—Very much so.

600. Your impression was, speaking generally, of the officials, the better classes themselves, that they were in a low state of vitality?—Yes, I might put my answer that I grew to recognise the men who were opium smokers by the look upon their faces.

601. Did you say nine-tenths of them?—Eight-tenths or nine-tenths of the adult men.

602. Then the exceptions would be the persons who did not smoke opium?—I include under the words "smoking opium" those who smoke a little and those who smoke to excess.

603. And you draw a sharp distinction then?—No, where the craving is established I hold that a man is an opium smoker.

604. Are all such persons then persons of weakened health?—In the case of the rich, who have sufficient food, they are not. They may continue the habit without showing perceptible injury physically, but in the case of the poor, where they have very little food, and must smoke, they show it very quickly. The influenza epidemic affected the poorer classes in much greater numbers than the rich.

605. But your general impression was that the public health was deteriorating in that city?—Beyond doubt and question.

606. (*Sir J. Lyall.*) I suppose the poverty is very great there, is it not?—Yes, as a general statement it may be said to be so.

607. The people are, a large proportion of them, underfed, do you think?—From a British standpoint, underfed; from a Chinese standpoint, satisfied; the Emperor has almshouses in the city, where any people who wish to go may get food gratis.

608. (*Chairman.*) You heard the statements made by Mr. Broomhall with reference to the action he would desire to see taken by the Government of India in relation to the opium trade. Do you support his recommendation?—Distinctly. My desire would be to know, for the credit of England, that it could not be cast in our teeth that we carried opium in one hand and the Gospel of salvation in another. It injures one's life-work as a missionary.

The witness withdrew.

Rev. A. Elwin.

The Reverend A. ELWIN called in and examined.

609. (*Chairman.*) Are you a member of any university, Mr. Elwin?—No.

610. How many years have you been a missionary in China and in what districts have you resided?—For a

little more than 23 years; and I have resided, I may say, all the while at Hang-chau, the chief city of the Cheh-kiang Province, although of course I have worked from that city into the country districts.

611. Will you tell us what you have specially noticed as arising from the use of the opium?—I have been connected for about 20 years with a large hospital that we have in Hang-chau, where at present we have about 100 beds, and a certain proportion of those beds are assigned to opium smokers, so that we see the physical effects brought before us continually in the persons of those who come to be cured of opium smoking, and certainly the effects are most disastrous. My own work, in the country away from Hang-chau, consisted largely of itinerancy, travelling about among the people, and it was the greatest difficulty, in the country districts, to find any coolie or chair-bearer who was not an opium smoker, and over and over again I have noticed the following results: I have started in the morning with the coolies and chair-bearers, we will say, and after travelling for about three hours I have noticed that the men began to get weak and were hardly able to move; and then I have been told, "We must stop because the men wish to smoke opium." Well, we would stop for perhaps an hour, while the men would go to an opium den; and they would come out of the opium den new men—the load that a man could hardly carry before he went into the opium den he was able to pick up and carry with the greatest ease. Of course this only lasts for a time, as long as the opium effect lasts, and then, once more, he gradually gets weaker and weaker, until he can do nothing at all until he smokes once more. They are perfect slaves to the opium habit. That, as I have noticed, is the physical effect upon these people.

612. What would you say with regard to the physical condition of the agricultural population—are they able to do that amount of work which a labourer in good physical condition ought to be able to perform?—An opium-smoker cannot. While he is under the influence of opium, he may do a great deal, and perhaps may do more than another, but the effect soon wears off, and then he becomes practically helpless, and can hardly do anything at all. I have met with a great many of these men, both opium-smokers and others, and, as I say, I have for the last 23 years had considerable experience in this way.

613. Would you say that the agricultural population in the district in which you have lived in China was insufficient in physical ability?—Not at all; they are very strong indeed, and with regard to the general agricultural labourers, so far as I have met them, not many of them smoke. It is chiefly those I have met with in the cities that I think have smoked, and those whom I have engaged in the cities to go into the country; there is a great difficulty in getting men who are not smokers.

614. And would you say that the artisans of the towns are wanting in physical ability?—Not at all.

615. So that neither in the towns nor in the country, generally, would you say that the physical ability of the people was unsatisfactory?—No, I should not; but I should like here to say, as the gentleman who preceded me said, that I speak entirely of what I have seen myself in Hang-chau and in the vicinity. I know perfectly well that it is very much worse in some of the interior districts, but with regard to Hang-chau we did not see quite so much evil among the people; there are not quite so many smokers as there are in some of the interior cities.

616. What proportion do you think that the habitual or excessive smokers bear to the whole number of the population in Hang-chau?—Well, I should be very sorry to say—it is so very difficult to find out; I really should not like to say what the proportion is, but with regard to the special class, I can say that it is the greatest difficulty to find a coolie or a chair-bearer who is not a smoker. They nearly all smoke.

617. Perhaps there may be a larger proportion of smokers in that class than in the mass of the population?—I think their temptations are greater.

618. Do you think that the practice is increasing generally in your district, in the district of Hang-chau?—I have not the slightest doubt about that. When I went to Hang-chau, I will say 20 years ago (I was there before that, but will say 20 years ago), as we went through the streets of Hang-Chau it was comparatively a rare thing to see an opium shop; that is to say, where opium was sold and smoked. We could always tell an opium shop by a curtain in front of the door; it is the only shop in that large city that would have a curtain in front, and when I asked why the curtain was in front, I was told that it was so that the

magistrate, when he went his rounds through the city, would not see the opium being smoked—he could shut his eyes to it—but if the man in the shop did not pay the "squeeze" which was demanded, the magistrate would very soon discover that there was an opium-smoking shop there, and the man would be had up and severely punished. And now I know for a fact that there are more than 1,000 opium-shops in Hang-chau, in that one city.

619. Would you consider that the officials show culpable laxity in not enforcing edicts which it is their duty to enforce in relation to the practice of opium-smoking?—I am quite sure they do. I believe they look upon the opium question—many of the officials look upon the opium question—as a means of receiving bribes. It is known among the people generally—they all say so—that if the people who own the opium shops are willing to pay, they can keep the opium shops without any difficulty at all, but if they will not pay, they are sure to be discovered and punished.

620. (*Sir J. Lyall.*) But is there not, nowadays, some recognised system of licensing opium shops in your part of China?—There is; there is a system of licensing the opium shops, but I do not know what that system is.

621. (*Chairman.*) What have you to tell us as to the sources from which the opium consumed in Hang-chau is supplied; is it mainly from local sources—mainly Chinese opium—or is there any considerable proportion imported?—I should think by far the larger proportion comes from Shanghai and Ning-po, Indian opium. We have not got so great a cultivation of opium—of the poppy—round us, as there is in some of the interior places. My friend, who has just spoken, lived in a place 2,400 miles from the coast, and you can easily understand the difficulty of conveying opium so far when it is taxed so often; but Hang-chau is near the coast—we are only about 3 days' journey from Shanghai—and, therefore, it is easier to get the Indian opium, and, of course, if the people can get the Indian opium they prefer it; it is stronger, and they seem to like it better. May I add one word with regard to the increase of opium smoking? I suppose, up to 10 or 12 years ago, I had never seen the poppy grown at all. I had never seen such a thing; but when I left China a few months ago, if I went into that district I saw the poppy on all sides; the field prepared for the poppy. It is extending there very much; the growth of the native opium.

622. You wish to say something, I believe, to give us your view as to the effect of the alleged connexion of the British administration with the opium trade in relation to your special work as a missionary?—With regard to that I can only say this, that we hear so frequently the remark made by the natives; when we speak to them they say: "You have brought us the opium, and therefore we do not want to hear anything else; we do not want anything else from you." And, with regard to that hospital which was started originally to cure Chinese of smoking opium, I have heard them say this: "First of all you bring us opium, and now you start the hospital in order to cure us of smoking it."

623. Have you any further general statement to make?—With regard to the moral question I should like to say a few words.

624. Yes?—Missionaries are accused of exaggeration; it is said that they exaggerate the evil of opium smoking. Well, I must say this with all my heart, that I believe it is impossible to exaggerate the evil of opium smoking in China. I do not wish to repeat what you have heard already from those who have spoken this morning; but I will only say this, that I can endorse every word that has been said with regard to the dreadful curse that it is to the Chinese people. There was a letter in the "Standard" this morning which I should like just to make one remark upon. Perhaps you have already read it; but there is just one sentence I should like to read. The writer of this letter has been abroad for no less than 35 years, and has had great experience, it would seem, amongst opium smokers and others. He says, "And are the consequences to others as injurious from opium as from alcohol? The drunken European artisan or labourer returns from his home well-nigh mad from drink; attacks wife and children, and in his fury maims and often kills them. The opium eater or smoker, when he indulges to excess, sleeps off the effect of the drug, and though he may injure his own

Rev. A. Elwin. "health, is comparatively harmless to others." And then lower down he says, "I never saw any person so affected by the drug as to be dangerous to others"; and here I think we ought to remember that although it is quite true that the drunken European artisan or labourer returns to his home well-nigh mad from drink, attacks wife and children, and in his fury maims and often kills them, here the opium smoker does what I consider is quite as bad, he will sell his wife for gain. A man who is a drunkard gets the money, and he buys the drink, and then kills his wife; the opium smoker first of all sells his wife—he begins at the other end; he sells his furniture, his children, and his wife, and his home; and when he has disposed of them all then he drinks, and has no wife left to kill. Of course it has not the maddening effect; but still the money must be obtained, and the opium must be smoked, everything must go in order that the craving for the opium may be satisfied.

625. (*Sir W. Roberts.*) I was much interested in what you said about these coolies. You say that after working about three hours they were exhausted, and that they had their pipe of opium and revived?—Revived.

626. Did they not take a meal at the same time?—No.

627. No nourishment at all?—Very often none at all, as I know for a fact. In many of the opium dens where I have seen them go in there is nothing to be had but the opium, and I should just like to state here that I believe that is the reason why there is so much discrepancy in the testimony with regard to the effect of opium smoking. These poor people (and the great mass of the people are poor) literally live on the opium; it is their meat and their drink, and consequently they very soon must come to grief altogether; they cannot stand the strain upon the system. But on the other hand we find gentlemen stating that they have known people smoke opium for years, and that there has been no ill-effect at all, and I think the reason is not far to seek. These people have had food,—good food and nourishing food,—and therefore they have been able to stand the strain of the opium smoking, and have stood it for years, because the good and nourishing food has to a great extent counteracted the ill-effects of the opium smoking.

628. These coolies, I understand, are strong, muscular fellows?—They are strong, muscular men, and many of them had been, perhaps, field labourers or farm labourers before they had taken up the special work of carrying these loads.

629. One impression was that they are short lived?—Undoubtedly, because they keep on increasing the dose, and they gradually go lower and lower. I have seen it. I have known men myself strong, muscular men—I have known them take the first pipe, and gradually, year after year, get lower, and weaker and weaker, until at last they have been good for nothing, and when I have wanted a coolie, I have said, "On no account send so-and-so," because I have known the man was no good at all, and would only be an hindrance instead of a help when I was travelling.

630. I assume a good many of these coolies will continue their opium eating in moderation?—I do not think so from what I have noticed, they increase it. The craving is something so terrible—it is something so awful—and a man will take so much in order to satisfy the craving we will say this month, but next month he increases it just a little in order to get more enjoyment out of it, and, to satisfy the craving, will daily increase the dose. I do not know any such thing

really as a moderate opium smoker. The dose is always, I believe, increased by degrees.

631. Is that more the case among the lower classes than among the more educated classes, do you think?—No, I do not think so. I have seen it among all classes—among mandarins, officials, and what are called the literati (the scholars), and I believe it is practised among all classes.

632. No; I mean as to the deleterious effect and the necessity of increasing the dose?—I do not think it shows so much where a man has food, and nourishing food, which to a certain extent counteracts the effect of the opium; but, unfortunately, many of those people we have to deal with almost live on the opium. I have known many, many men who have really been expending half their income on opium. The ordinary rate of wages (that was in the Chinese money) is 200 copper cash a day; well, they will spend 100 of these copper cash in opium, and the rest they will spend in food, or in helping their families, as the case may be.

633. I suppose you have not had any opportunity of noticing the difference in the opium habit as it affects persons of different races?—No, I have not, but I think from what we read it must have a different effect in some parts. A Chinaman we can tell directly by his eyes when he takes the opium, you can tell by the look of his eyes and his face—he becomes pale and emaciated. You can always, as a rule, tell the opium smoker. Many years ago, when I first went to China, it was the greatest disgrace to be an opium smoker, and to accuse a man of opium smoking was a serious thing. Now, if you accuse a man of opium smoking, he simply laughs; he will not defend the custom, but he will laugh and turn it into a joke.

634. (*Mr. Pease.*) You did not mention with what missionary organisation you are connected?—The Church Missionary Society.

635. (*Sir J. Lyall.*) You say you never saw the poppy grown in the country which you know till about 10 years ago?—Ten or 12 years ago, yes.

636. Do you connect that growth of the poppy then, in that country, with any action that our Government has taken, or what do you think is the reason?—I think undoubtedly if the Chinese in this district had not had the Indian opium to begin with they would never have needed the native opium. Of course the question of gain comes in, because I was told on good authority that a man in a certain piece of ground, we will say, might get two dollars by growing rice; he could get six dollars by growing opium, and therefore the temptation to grow opium is so great that the people naturally give way to it.

637. But the habit—the opium habit—is of considerable standing in the country, is it not?—Undoubtedly, where we are this hospital that I have referred to was originally started by a gentleman giving 2,000*l.* for that very purpose, to start an opium refuge where opium smokers could go and be cured. It was opened first of all at Ning-po, but about 20 years ago it was removed to Hang-chau, and there it has been ever since, and it is out of that opium refuge, or opium hospital, that this larger hospital has grown.

638. The habit being of long standing, I mean, what has happened to encourage the growth in the last 10 years?—The numbers of the people now; there are so many more smokers, and of course the native opium is much cheaper than the Indian opium, and so there is a demand for it, and naturally the people try to supply that demand by growing it.

The witness withdrew.

Mr. M. Wood.

Mr. MARCUS WOOD called in and examined.

639. (*Chairman.*) Will you tell us with what mission you are connected, *Mr. Wood*?—The China Inland Mission.

640. How many years have you been in China?—Seven years.

641. And what was the district in which you presided?—Principally in the province of Gan-hwuy, in the capital city of Gan-king—there for five years; and one year was spent in Chung-king, the capital—not the capital, but the open Treaty port of Si-chuen; the other year was spent mostly in travelling through

Hu-peh, and in taking missionary journeys into Si-chuen and Yun-nan. So that through these journeys I have passed through several provinces in Central China.

642. Will you give us your observations with regard to the use of opium: is that a common practice in all classes of the community where you have resided?—Excessively common in all classes with the exception, perhaps, of the agricultural districts; it is not so common there as in the large cities and thickly populated districts.

643. What would you say as to the effects of the opium habit, whether you look at it morally or physically?—I should say most destructive to the consumer, both morally and physically, and that in all classes of society wherever it is used; the only difference being, as has already been referred to, in the higher classes, where one has more opportunity of nourishing the system by good food. There it does not tell so quickly, but I consider not less really in the long run, only longer time may be allowed because of the nourishment that is taken.

644. What do the Chinese say themselves upon the subject of opium; what is the state of public opinion with regard to this question?—Well, I may say that in my seven years' experience of the different provinces I have never met any of the Chinese who defended the practice of opium smoking in any way whatever. In fact opium smokers would not themselves defend the practice, but would rather deplore that they have been affected by the use of it, and seek help from us to break off the habit. So that even the smokers themselves will not defend it, having already experienced its evil effects upon themselves and families; and those who are non-smokers are frightened lest their young people should become addicted to this fearful habit, which they look upon with such a terror.

645. There is a wide difference of view, is there not, with reference to the effects of opium? There are some who would tell us that though certain tribes and races are habitual smokers, still they are well nourished and that they have got good physical ability; and that, in fact, there is such a thing as a moderate use of opium, which is not injurious as compared with the admitted evil effects of excessive consumption. What would you say about these statements?—I have seen these statements in public papers since returning to this country; but I must say I have no sympathy with them; from my own experience I cannot endorse them. My experience is more like that of the Rev. Mr. Elwin, who has just preceded me—I do not consider that opium can really be used in the way that has been mentioned in these articles; that is to say, it cannot be taken in moderation. It is always increased week by week, or month by month, as the case may be, the only difference being, as has already been stated, that where a person is healthy and able to procure good nourishing food, it may not tell so quickly upon the constitution, but no less really. I do not consider that opium can be compared to alcohol in that way. In this country we know of thousands, perhaps tens of thousands, who may be able to use alcohol without any injurious effect, as far as anyone knows. That, at any rate, is an open question. But, speaking generally, we may say that thousands use alcohol without excess, but in China my experience is that the opium cannot be used in the same way at all—that as soon as a man becomes an habitual opium smoker he increases his dose, and whenever he touches it he is obliged to go on, unless he stops immediately. If he allows a month or two to elapse, he becomes addicted to the habit, and increases the dose as time goes on; so that I do not consider that they can be compared on the same platform at all.

646. Will you tell us from what sources the opium consumed in your district was chiefly obtained; was it obtained from local sources, or was it by importation?—In the province of Gan-hwuy where I resided longest—five years—it is now a mixed article. Seven or eight years ago, when I first went to the country, a great deal of Indian opium was used in Gau-hwuy; because, as you notice, it is on the Yangtze river, between Hankow and Shanghai—the large Treaty ports easily got at. But in recent years, say, within the last 10 years, the natives of these tracts have taken to growing the poppy. When I first went to China, in that province there was very little poppy seen anywhere; it was very scarce; indeed you might travel through the province and not observe it. But now it is a common thing to see the fields covered with the red poppy. It is quite common in recent years, and indeed the retail merchants are mixing the two articles, the native opium, which is the cheaper, and the Indian opium, which is the better quality; by mixing the two together they make the native opium a little more palatable, having the Indian mixed with it.

647. Have you anything to say to us with reference to the effect which you consider is brought about by the alleged connexion of the British Government with the opium traffic, in regard to your own work as missionary?—Well, I may say with the other speakers,

that it is always brought before us whenever we are speaking to the natives as being the one thing which makes them hate us. I believe there is a hatred to Europeans among all the Chinese, as has been seen recently in these riots; but I have great reason to believe from my own experience, having passed through one of the riots myself in Chung-king, that the natives hate us who belong to Britain more because they know of our connexion with the opium trade; and that is one great factor in the present hatred of the Chinese to Europeans, and especially British subjects. That has been my own experience. I simply give it as evidence.

648. Can you connect that feeling of hostility more particularly towards the English with the memories of the wars of the past?—Memories of the wars of the past, and more particularly the present condition of China on account of the use of opium so extensively. They credit us with that; whether rightly or wrongly they do not know, many of them. They hear it from others, repeat it, and pass it on from one to another; and I would like to say in this connexion that, as a missionary, I would make a distinction between the reception we have as individuals and as nationalities. I should say that the Chinese hate us as a nation, largely because of our connexion with the opium, but as missionaries we are received in many parts more hospitably. After they get to know us individually, they distinguish between the missionary and his country. That often takes years, in order that they may be able to learn that distinction. They look upon us when we first arrive in a new town as foreigners; they find out that they have to do with the foreign nation, and they do not want us there; they hate us, and try all they can to put us out of the place; and when these riots take place I may say that the common people are very often not at all anxious to take part in them, they are generally instigated, I think, by the mandarins, the higher officials and the literati.

649. The riots?—The riots. In the riot I saw at Ch'ung-king, I entirely believe that the common people were only too sorry that the missionaries were turned out of the station. They were glad to have us there; and they had no reason to dislike us. Personally they were our friends; and it was the literati and the officials who wished to see us out of the place. That was because they knew least about us.

650. To sum up your evidence in one short statement, I may take it from you that you are here to-day to urge that the Government of India should prohibit the exportation of opium to China?—Certainly.

651. Nothing less than that would satisfy your view as to what ought to be done?—No, I see no other way out of the difficulty as regards China from a missionary's point of view.

652. (Sir J. Lyall.) You say you see no other way out of the difficulty as regards China from a missionary's point of view?—None whatever.

653. I suppose you mean by that, that you think the measure would diminish the hostility of the Chinese to the foreigner?—I think it would be a very great factor toward that. I cannot see how it would be otherwise. The Chinese would see then that we had some interest in their welfare, and were willing to show it by doing away with the revenue which we derive from it, as they know, in order to give them the opportunity of putting down this terrible evil in their own country.

654. Do you think we should be really able to convince them of that, or do you think that, the Chinese mind and intellect being what it is, they would not find some other ground for a general hostility towards foreigners—do you think they would not find some other explanation of our action?—That I cannot say. But it seems to me that the most reasonable way of looking at it would be that it would suggest itself to their minds, knowing as they do the agitation that is going on just now in the country about it, they would surely say that it was an attempt, at any rate, to show that we were desirous of their welfare.

655. (Mr. Mowbray.) Is it the opium smokers who show this hostility to you on account of opium or the non-opium smokers?—Both classes; but I should say perhaps the opium smoker first. But I do not know that we can very well distinguish. All classes of the people seem to hate us, until they get to know us individually. As a nation they seem to hate us.

656. The opium smoker loves the drug, but he hates the person who brings the drug?—No; I should say he hates the drug as well as the person who brings it; but

Mr. M. Wood,

13 Sept. 1898;

Mr. M. Wood.

13 Sept. 1893.

he has become addicted to it to such an extent that he cannot give it up. He is in such a position that he hates the drug itself, although he is clinging to it.

657. He takes it against his own desire?—He takes it against his own desire—his own best inclinations. It is really a habit which he has himself got into, and one which he would gladly break away from. I may say, as an evidence of this, that we have constantly in our Mission stations—daily, I might say—tens of men coming to us, dozens of men coming to us, asking us to give them something which will break off the opium habit; some medicine to counteract it and free them from it. In many stations we have opium refuges on purpose for receiving these.

658. I do not know whether you have given us what, in your opinion, is the proportion in your own experience of smokers and non-smokers?—It is very difficult to give any accurate figures in China. My own impression of Gan-hwuy is, that about 60 per cent of the male adult population in the city of Gan-king—a capital city—smoke opium.

659. And you believe that, if the import of Indian opium was stopped, that that would really induce the Chinese to put down the growth of their own poppy?—That is my personal impression.

660. That, is all I am asking?—I mean to say by that, that while there may be much to be said on both sides, yet it seems to me that such action on England's part would give the opportunity for the Chinaman to do as he often says he wants to do, to stop the opium habit altogether. He is always saying that, and we can only believe what they say until we see what they will do. But I think that would be the best opportunity for them to act.

661. (*Sir J. Lyall.*) You say that you can only believe what they say; but how is it consistent with any real detestation of the habit and condemnation of it, that as one of the previous witnesses said, and as I have also read elsewhere, it is the common practice for Chinese Society to offer every guest who goes into the house a pipe of opium?—That is becoming common; but it has not been very common in my part of China. Only three or four years ago, no Chinaman was considered a respectable member of society, that is from their own standpoint, if he was an opium-smoker at all. It was quite a disgrace if he was pointed out as an opium-smoker.

661A. No gentleman would have liked it to be known even though he smoked it?—I cannot say that; in my province I know that custom is greatly on the increase; and, therefore, I consider that it is merely the continual use of the drug which is taking away the moral sense of the people. They know what is right if they are left without the opium, and when the opium becomes such a habit, then it demoralizes them to such an extent that they do not look at it in the same light.

662. It is against the Buddhist religion to smoke opium?—It is; and I would just like to make this statement before I retire, that my experience in all the provinces I have been in, is that none of the Chinese native churches—Christian churches—will admit to

their membership anyone who touches the opium in any shape or form. Whether he grows it, sells it, or smokes it, they consider it is a distinct barrier to membership in a Christian church—not the missionaries but the natives.

663. Is not that among the Protestants?—I mean the Protestants, yes.

664. But among the Roman Catholics it is not a bar, is it?—I have no personal experience of that matter.

665. I have read so in some books?—Perhaps some of the other missionaries might touch upon that point. I have not had personal experience enough to say. I know that in all Protestant Christians it is so—native Christians; and that without any interference upon the part of a missionary; it is quite spontaneous.

666. (*Sir W. Roberts.*) Might there not be another reason why those connected with opium, whether as smokers or producers, should not be admitted to the Christian churches; does not the very fact of this refusal—is it not intended to be a sort of counter-demonstration against the charge that is made that the English brought the opium into the country?—No, I do not see how it can be that, sir; because in this way, it is always the native Christians themselves who have the right of keeping back any one from the membership of the church. So you see they are altogether friendly to the Europeans.

667. What I mean to say is, would it not be almost necessary for them to take that attitude, otherwise if opium smokers were taken into the churches they would say, "Oh, here you are; you encourage the thing; it is here in the churches; as well as by introducing it"?—Of course it is essential that they should not allow a native to become a member of the Christian church for that reason; and that is, of course, taking the highest ground they can take; the native Christians would not consider it right for anyone to touch opium who professes to be a Christian; it is altogether contrary to Christian principles because it is so harmful.

668. You seem to have travelled through the country a great deal in the last six or seven years?—Seven years.

669. Are you a medical man?—Not a medical man.

670. Then you would not, perhaps, form any opinion as to whether there was evidence of degeneracy of race in China, in the community at large?—From my own experience, as non-medical man, I should certainly say there is a great deal of evidence. Wherever the opium is more grown and more used, there the people are far worse physically.

671. So that you do not think China is awakening, but gone to sleep; that is your impression?—China is certainly not awakening. China is becoming more and more demoralised as the opium habit increases. That is my impression.

672. That is your strong impression?—That is my strong impression.

The witness withdrew.

Rev. F. Brown.

Rev. FREDERICK BROWN called in and examined.

673. (*Chairman.*) You are a missionary of the Methodist Episcopal Church Mission, are you not?—Yes.

674. How many years have you been a missionary in China?—10½ years.

675. In what districts have you served?—In the provinces of Chih-li, and Shan-tung, coast provinces.

676. Will you tell us briefly what is your experience as to the effects of opium on the Chinese consumers, whether you look at it from a moral standpoint or the physical standpoint?—I look at it from both standpoints as distinctly bad. The moral effect on the heathen seems to be to rob them of all that little moral sense they seem naturally to have; and it turns them into thieves, liars, fornicators, and it seems to turn them into everything that is bad. I speak now especially of the heathen.

677. In what way have you found the alleged action of the British Government, or the Government of India, with the opium trade, to prejudicially affect your work?—I find that I am frequently ashamed of my nationality; during my 10½ years' residence in China

it has been my privilege to travel extensively in the two provinces I have named, and to go over the same ground frequently; and I have often been taunted and ashamed of my nationality, bringing the Gospel of Jesus in one hand, and in the other hand opium—my nation was sending the opium into the provinces in which I travelled. The moral effect of opium on our native Christians (or the immoral effect) is very marked. We have distinctly cases in which we are greatly puzzled—we are obliged to excommunicate several each year, possibly five or six. I returned to England in May, and in January one of our native ministers had been charged with opium smoking. He had taken it to relieve his pain, he had been sent to a most out-of-the-way place, and without being able to consult a medical man in his illness, had been advised to take a whiff of opium. He had done so, and possibly more than once. The man became a smoker in his capacity as a Christian minister, he was disqualified. He to-day, while regretting it more than anyone else probably, is not preaching the Gospel, but feels himself morally unfit, and the Church feels bound to relieve him of his

office. I give this as an instance of the way in which we, as Christian missionaries, are affected through the opium. If you would allow me to speak of the physical deterioration, I would mention that I have taken some prominent part in famine relief work, and I would distinctly state that I have noticed that the opium smokers were the first men who seemed to fall under the strain of scarcity of food. I would also state that the mission with which I am connected is possibly the largest educational mission in China. We have colleges in four or five different cities, and we find that when the son of an opium smoker enters the college, he is really unfitted to compete with the sons of non-smoking men. I may state that the colleges are not strictly kept for the sons of Christians, there is admittance by paying; they get a thorough good Western education. We find that we occasionally get opium smokers' sons, and they are unfit to endure the ordeal which is placed upon them in that place, and frequently withdraw. I would also state that I have resided close to the Examination Halls in Pekin city, where each year there are a large number of graduates go in for the metropolitan examination, and men are carried out from the Examination Halls, during the time of examination, dead, and invariably, when you ask who the man is, the reply is, "Oh, he is an opium smoker." No smoking is allowed, I understand, in the Examination Hall, and he dies under the strain.

In answer to the last question on the paper which I had placed in my hands, as to the effect it had upon my work, I would put in three petitions. The native Christians knew of my return to England, and as the mission with which I am connected is an American mission (though I am engaged to travel the district, and have full charge of the work in the Shan-tung province) our members asked me to bring a petition to England, and try to stir up in the minds of the English people a feeling on this matter. I represent to-day an aggregate of over 1,000 native Christians, and I have three petitions here, one representing 448 Christians of four different missions, two English and two American. I have another representing 600 Christians in the Shan-tung district, who spontaneously got together and wrote a petition on satin to the Queen of England. It has seemed impossible to present it to the Queen. I have shown it often. I have translations of the petition, which, if thought advisable, I might read in your hearing.

678. Yes, we shall be prepared to hear it?—This petition distinctly states:—"We the members of the Christian Church in Shan-tung see all around us evidences of the destructiveness of this deadly drug, and desire to see the use of opium suppressed in China. Opium has long been the bane of our country, through folly and ignorance many of our people have been taken in the snare. This is no light calamity, opium slays the smoker, wastes wealth, scatters mothers, renders wives homeless, the nation is impoverished, families are destroyed, and very many lives sacrificed. Happily for us the holy religion of Jesus came to China, taught by missionaries who expounded to us the doctrines of truth, dispersed the cloud of delusion, and helped us to escape from the paths of error, thus it is that we have avoided the sin of the opium smoker. We have established an Anti-Opium Association, and with one accord we pray God, morning and evening, to bring about an end to this calamity. We now with all respect pray the Sovereign of England with her ministers and magistrates mercifully to pity China, whose ignorant and foolish people have suffered the mischief wrought by opium. We also pray all merchants and traders dealing in opium to cease from bringing it to our shores in response to our humble cry for our people, our homes, and country, and we will ever remain your grateful petitioners. This favour we natives of China beg at your hands. Signed by native ministers of the Methodist Episcopal Mission, and eighty leaders of the Church in the Shan-tung District and representing nearly 600 Christians. Translated by F. Brown.

679. The petitioners in that petition seem to assume that the great evils of which they speak are due entirely to the importation of opium. They do not appear to recognise the much larger quantity of it that is supplied from local sources?—I would say that in the provinces of Shan-tung and Chih-li, so far as I am able to judge, the local production is limited compared with other provinces. It is nearer the coast, and the foreign opium is more accessible.

680. Would you say that the foreign opium represents the half of the consumption?—I would certainly say so.

681. Is there any other petition that you would like to bring before us?—There is another petition here.

682. Is that numerously signed?—This represents about 300 Christians from the province of Chih-li; the other is from the province of Shan-tung.

683. Would you read us that?—It is signed by the native ministers only:—"We the ministers and officers of Methodist Missions sign our names to this petition 'begging that measures may be taken to stop the use of opium, and save the Chinese from the ruin which it causes. From the entrance of Christianity into our country many missionaries have been putting forth efforts for the elevation of our people, and we native Christians are striving to copy their example and virtuous deeds. As to tobacco and wine most of our congregations have adopted prohibitory rules after careful discussion. Even non-Christians in many cases gladly yield to exhortation and follow the same rule as the Christians. But as to opium smoking it has prevailed for many years, the habit has been formed, and although the craving is less in some cases than in others, yet the mischief wrought is intense and to check it is impossible.'" (This is a literal translation of their petition.) "Time after time has China's Sovereign and high officers issued prohibitory proclamations. The missionaries with the ministers and laity of Christian congregations have repeatedly exhorted the people on the subject of opium smoking. But opium traders have been eagerly coming and going all the time, rendering it most difficult to eradicate the evil by stopping the supply. The poppy has been grown in China in limited quantities. But the bulk has been coming from India without intermission." (This statement will be accounted for by the fact that they grow it in limited quantities in this province, in the province of Chih-li.) "There is no evil from which our country suffers that can be compared with this. It is our humble opinion, which we state with all modesty, 'that he who confers a benefit should first cease to do harm' and stop the inflow of evil. The source of mischief should by all means be purified. We take the opportunity of the return to England of Pastor Brown to append our names to this petition and entrust it to his care in the hope that measures may be taken to stop the export of opium from India to China and secure the lasting benefit of our people, whose gratitude will never cease. Here follow the signatures of the chief pastor and 67 ministers and leaders. January 1893." The ministers and leaders represent about 300 native Christians.

684. (Sir W. Roberts.) Have they memorialised their own authorities in the same sense?—No, I am not aware that they have.

685. That would not be safe for them, I suppose?—It might not be safe for them. Moreover the high official Li Hung Chang, the Viceroy of Chih-li, I think has distinctly stated that he has not much sympathy with the putting down of the growth of opium in China while the Indian opium is allowed full sway. That is distinctly understood by the natives in both provinces, and consequently the English Government get the benefit (possibly more than they deserve, but the full benefit,) of all that can be said against opium.

686. (Sir J. Lyall.) Is it a fact that the Chinese Christians (converts, you know) are taken in any sense under the protection of the European Governments to which the missionaries belong?—That the native Christians are taken under the protection of European Governments?

687. To which the missionaries belong?—I am sorry to say that in some cases it is so. In other cases it is not so, for the missionaries distinctly give the native Christians and churches to understand that they will not interfere in matters appertaining to the Government—Government cases, law cases. There are ample opportunities, but in most cases, I think, they do not interfere.

688. So far as it is the case, is it not alone sufficient to account for any hostility on the part of the Chinese people, and particularly the Chinese officials, to foreigners?—To take the native Christians under our wing

68 Yes, the fact of the conversion of a man makes him no longer fully the subject of the Chinese Govern-

Rev. F. Brown.
13 Sept. 1893.

ment?—If it were so, it certainly would be very much opposed by the heathen. The heathen would look on such a man as half a European, but it is not so in most cases. We distinctly give them to understand that we do not interfere with their Government or their law cases. A Chinaman becoming a Christian is still a Chinaman.

The witness withdrew.

Brigade-Surgeon R. Pringle, M.D.

Brigade-Surgeon R. PRINGLE, M.D., called in and examined:

691. (*Chairman.*) Are you a member of the medical profession?—Yes, my Lord.

692. You were in the service of the Government of India?—Yes, Brigade Surgeon.

693. How long were you in India?—I served for 30 years in India.

694. What parts of India are you acquainted with?—Orissa for eight years, two years in Central India, and 20 years in the North-West Provinces.

695. What does your experience convey to you with reference to the question which has been committed to this Commission—what is your general impression with regard to the opium habit, with regard to its effects. Take, first of all, the physical condition of those who are opium eaters and smokers?—In this relation I would note first of all the medical aspect, and then the religious aspect; the difficulty of the natives doing without it, and the possibility of the effect upon the people of the withdrawal of it. First of all, the medical aspect. As a medicine opium is invaluable when prescribed medicinally. As a dietetic substance I consider it is absolutely unsuited for dietetic purposes. Its action on the digestion is such as to remove it entirely from the category of dietetics. With reference to the febrifuge properties, it is merely febrifuge on the principle that it is sudorific and sedative. It relieves the system by the skin, and it gives rest and relief from pain and suffering, and thus admits of restful sleep at night, both as regards malarial rheumatism and malarial dysentery. With reference to its effects upon the people themselves, I can only say, and say it most thankfully, that as regards India, in the districts that I have seen, the effects of it are not visible to any extent whatever upon the agricultural population. The cases in which the effects of opium are visible are those, who, by the habit, have drifted from higher into lower positions, and have thus collected in large cities, in what might be called the slums, as the dregs of the populace. I consider that India as yet is protected by its very high moral tone of self-respect from becoming victimised by opium. Habitual indulgence in opium is so absolutely contrary to any notion of self-respect, that I cannot understand any native—any respectable native—ever giving way to it without feeling that he has lost position, lost influence, and lost caste.

696. You were in the North-West Provinces, you say?—For 20 years, my Lord, as sanitary officer.

697. That would bring you in contact with the Sikhs, would it not?—To a certain extent, but not so much as in the Punjab.

698. Had you anything to do with any of the races which consume opium in India?—Yes, as medical officer in charge of a native regiment on service—in a very malarious district; when their constant request to me was for quinine. I prescribed quinine very largely, but never was once asked for opium; though I am afraid my demands upon the Store Department in Calcutta were so large with reference to quinine that I was called upon for an explanation for this large expenditure, and the civil officer in charge of the expedition stated that the large expenditure of quinine was absolutely necessary to maintain the force in any efficiency for the hard, long marches in these malarious districts. I consider that opium was never suggested as a febrifuge under any condition whatever. Of course I prescribed it as a medicine in combination with others, but never used it as a febrifuge.

699. (*Sir J. Lyall.*) What country was that expedition in?—In the hills of Orissa, near Cuttack.

700. And what were the troops?—The Bengal Native—the 53rd Native Infantry.

701. What province did the sepoys come from?—They came mostly from Oudh and the North-West Provinces. That was in 1854 and 1855.

690. If he is backed by a foreign Government, as it were, if he becomes a Christian, he is no longer fully a Chinaman?—If he was backed by a foreign Government he would not be a Chinaman; but it is not so, we do not interfere in their law cases.

702. (*Chairman.*) From the evidence that you have already given, I suppose I may take it from you that you do not hold that opium has had a wide effect in bringing about a state of moral degradation in India?—I consider that the population, as such, is practically untouched by the opium habit, as we see it in the villages and in the respectable portion of it. Of course I am not alluding to those who are drifting into the lowest classes of the people, or who may be found collected near coolie depôts, or men who, from a good strong physique, have fallen under the influence of opium, and thus have had to give up their regular work as palanquin-bearers or as workmen. Because, if a man once takes to opium, his time of immunity under the influence of opium is merely a question of the power of digestion, if that is seriously interfered with, the drug is too apt to supply the place of food, and while a man lives under the stimulation of opium, though he can carry on a very considerable amount of work, yet he gets lower and lower under its stimulating influence until the depression comes, when he feels that he practically cannot live without it. Those people are not to be met with in villages. There is no place in an Indian village that I have ever seen for a drone. Unless he is a wealthy man he must be a worker, and if he ceases to work he naturally drops out of the village or the agricultural population, and if he has taken at all to opium, his position as a respectable man is seriously compromised; while if he is engaged in business or trade, his habits of honesty, or probity, are compromised; for when a man is described as an opium eater or smoker, it is tantamount to saying that he is under influences that make him hardly trustworthy.

703. What do you say with reference to statements which have been made by very many to the effect that the use of opium in very limited quantities inevitably tends to an increase in the use, and ultimately to an abuse, or rather an excessive use, of opium?—On the principle, my Lord, that no stimulant of this character can be taken without keeping up the quantity—it may be increasing the quantity—because the stimulation requires more and more of the substance to bring it up to a given height, and unless it is up to that height, the tendency is to take more to raise it to it, until at last too frequently the very drug itself comes to be so paramount, that it supplies the place of food, and really I can only describe it as the Chinaman does when he says that a man lives on opium at first, but ultimately opium lives on him. It is astonishing how little a man can eat and live upon when he is dependent upon opium.

704. (*Mr. Pease.*) You think it is more so with opium than with alcohol?—I think so, sir; though on many points there is no comparison between the two substances. When opium is taken, there is a necessity for the dose being gradually increased, or completely abandoned, half measures are of no use except under restraint. If opium is taken as a soporific, and the person leads a listless, idle life, he is bound to go on increasing the dose to produce sleep, whereas, if he leads an active life in the open air and has thus the possibility of producing sleep, then under ordinary conditions, he may not require quite so much.

705. (*Chairman.*) Have you anything else that you would like to say in your evidence in chief with reference to the moral, or physical, or religious aspects of the question?—I would only say, with reference to the moral aspect of it, that there is the evidence which has been published with reference to an inquiry held in Calcutta at the Calcutta Medical Society, in which a number of native medical gentlemen of position gave their evidence. I want nothing more to supply all that is necessary for the immorality connected with the smoking of opium than is supplied by this report of the Calcutta Medical Society.

706. Has that evidence been published?—Yes, my Lord, I have a copy of it here.

707. Will you show it to us?—Certainly I can leave this with your Lordship. I have no evidence that I could wish to give, with reference to the immorality of the opium habit, of greater value than that document. The recorded inspection of these opium dens illustrates the whole secret of the immoral conditions connected with opium-smoking. There is not a den, for instance, visited by Dr. Crombie in which there was not one woman, and the whole point rests upon that. The presence of that woman was expressly for sensual purposes, and the way in which this evidence is given, as I wrote to Dr. Crombie, illustrated the sensual action of the drug by the woman who was present in every one of the opium dens that you visited, and by the statement of some of the native medical men, who stated that none but the lowest people,—those who are lost to moral considerations—indulge in smoking opium in those dens, in short that it was a sign of moral depravity. As regards its being taken in fever districts in small doses, I consider that any one who habitually indulges in opium in small doses in fever districts, instead of its giving him some protection from the disease, absolutely produces a tendency to fever. I should consider that if any man went, for instance, into a malarious district, and took small quantities of opium to such an extent as to interfere with the digestion, no matter how small these doses were, it would render him liable to fever instead of preventing it, because fever, in all malarious districts, is generally primarily connected with biliary derangement, and the action of opium on the biliary secretion is, as we know, very remarkable, and, unless care is taken, the constipation that results from taking opium is such as to produce very considerable biliary derangement, frequently ending in inflammation of the liver, and abscesses or dysentery. But I consider that the necessity of opium as a medicine is so great that I would not on any account wish it to be understood that I am saying a single word against what is strictly medicinal in its properties and uses.

708. Is there anything that you would like to say to us with reference to the attitude of the Government of India in relation to the opium trade?—My Lord, as a Government servant, and one who served the late Honourable East India Company, I can only say that I consider the relation which the Government bears to this opium trade is so entirely opposed to all that I have felt the Government has done for that country, where its one effort has been to materially improve it, and to raise it, that I feel bound in justice, as I love the people and I love my country, to lift my voice against it. I know the effect that it produces on the natives, this opium and liquor traffic. It has led to the most mistaken ideas regarding the aim that we have in view with reference to our presence in India. It is so apt to lead them to suppose that we are there for little or no other purpose than for making money, than which, nothing could possibly be further from the real aim and object, I believe as a Government servant, of the Government in India as it stands at present. I have known it and seen it, and I consider that there is no Government that the world has ever known in which the handful has ruled the thousands in the way it has. I know what the natives think of it themselves; they have spoken very fully and freely to me as a medical man, and if this blot, and the excess to which the liquor traffic is carried, were removed, I know of no great State movement which would show the people more powerfully or clearly that the one desire of the Government is for their ultimate good. I know there are those who say that to interfere with the habits of the natives as regards opium would be most dangerous as regards the public safety. I can only say, in opposition to this, that I have seen perhaps the most inquisitorial orders that ever were laid down by a Government, especially with reference to a Government like that of India, in a strange land, among people who have such remarkable notions about the privacy of their houses (I allude to the orders with reference to female infanticide carried out without any disturbance in the Agra and Meerut Divisions for 20 years), I know the way that this order was carried out, and nothing but the absolute assurance that the Government really meant it for the good of the people would ever have permitted such an inquisitorial act to be carried out without the most serious complications from men who resent any interference with their home life, but who really feel in this case, that when the Government entrusted into the hands of underpaid and low caste people this very important duty with reference to the births of females in their houses the Government

were doing it for a good reason and with a good object in view, and without a single word of complaint. I know it was carried out in districts where, to give an idea of the suspicious character of the people, when I was starting vaccination, they brought up girls to be vaccinated, because they believed it would kill them, and their death would lie at my door, but, when they found it to be the reverse, they kept back the girls, in the hope that they would die from small-pox and no further questions asked. This is a fact that I placed upon record, and it is in an official report. There is one other point which I would like to say with reference to the great question of withholding opium from those who have been in the habit of taking it, I feel that this is a far more serious question than it is at first supposed to be or we are apt to view it. Withholding opium from an opium-eater or an opium-smoker is a very, very serious step if the habit has gone to a certain extent. Unlike the alcoholic craving, i.e. it is a craving of intense pain—of intense agony—and the relief that is given has to be seen to be believed. To see a poor creature writhing in pain and agony—then just a few whiffs of his opium, or a small injection of morphia—to see him come into the room again as if really nothing had happened to him—just shows that the craving is a craving that, in all efforts to stop indulgence in opium, must not be lost sight of. Indeed this is proved absolutely with reference to Burmah, where the orders of the Government have been that for those who cannot give up the habit entirely and at once, if, giving it up it would be dangerous to their health, a register should be kept, and that they are allowed to have a certain amount of opium given to them. Now that establishes in my opinion, my Lord, the great point that there must be a very serious mistake when people suppose that the opium can be withdrawn easily from those who are confirmed opium-eaters or opium-smokers, in the case of those who to a certain extent may be almost dependent upon this drug for their very existence. This action of the opium is seen in a remarkable manner among those who are ill-fed, and live in malarious districts, where it seems to hold diarrhoea and dysentery in check, and when it is removed their conditions assert their sway and the patient is rapidly carried off. I would only, with reference to this point, allude to an article which appeared in the "Lancet" regarding the withdrawal of opium.

709. Written by whom?—By Dr. Mouat.

710. When did this article appear?—It appeared, my Lord, in the "Lancet" of April 30, 1892. This is my reply to the article in question, taken from the "Lancet" of September 10, 1892. Dr. Mouat's letter was of such very great importance, that a medical man, whose letter I hold in my hand, points out that these statements, viz., the ease and safety with which opium can be withheld from prisoners, and the fact that no deaths are due to the opium habit, must be met by facts, and not be attacked by any vague statements, but by unquestionable data. I therefore went and examined all Dr. Mouat's Jail Reports in the India Office here, and have extracted portions of them, which are in that little pamphlet I place before your Lordship. My letter produced the "Rejoinder" from Dr. Mouat, but the "Lancet" declined to publish my letter in reply, dated October 18, 1892, a copy of which, in pamphlet form, I beg to submit, as there is a paragraph in Dr. Mouat's "Rejoinder," which was of importance, because Dr. Mouat was under the impression (entirely mistaken) that my knowledge of the effects of opium on the prisoners was drawn from the jails of Outtack and Poree in Orissa, whereas in reality it is the outcome of the whole of my knowledge of jail management, gathered in a very careful inspection as the sanitary officer of two of the largest divisions in the North-West Provinces, when I had the opportunity of inspecting the jails and was in medical charge of the largest jail in India myself, the Agra Central Prison, until I took the jail fever and had to be relieved and another officer appointed in my place. I feel that it is necessary to state this, so that the Commission may have the entire correspondence on this most crucial subject. Further, I feel that statements with reference to jails in India, to my knowledge, require to be most carefully received, when we consider, as Dr. Mouat himself fully admits, the character of the subordinate native officials connected with the jails, and the tendency to receive money from friends outside is such that those of us who have seen much of jail management are sadly aware that the treatment a prisoner receives in a jail

Brigade-
Surgeon R.
Pringle, M.D.

13 Sept. 1893.

Brigade-
Surgeon R.
Pringle, M.D.

13 Sept. 1893.

depends a great deal upon the wealth of his relatives outside. To such an extent was this carried out in a model jail in the North-West Provinces.

711. I am afraid we must not go too much into that ? —But it is with reference to the withholding of any luxury. For if we say that opium cannot be admitted into a jail, I very much fear that that must be most carefully safeguarded, with reference to the very great difficulty in carrying out this order as Dr. Mouat has clearly shown in his own report. I will, however, not allude to that further; and with reference to what one reads regarding the apparent harmlessness of opium smoking, and some of the pictures that are exhibited of opium smokers in health and strength, would only take the case of the lascars, the native seamen, regarding whom I have here a sketch. This, my Lord, is the sketch of the native seamen, the lascars, taken from the "Daily Graphic." Now, to look at these men one would suppose that they were in excellent health, and that they were at all events not victims to the opium habit. I do not say that these men are victims to the opium habit. On the contrary, anyone who goes and sees the haunts of these lascars knows at once that in this country, when they stop at a port, it is then alone that they indulge in this habit of opium smoking. But I fear there is little doubt that many of them not only smoke it on shore, but eat it at sea. On one occasion a gentleman, whose name I can give—for I hold his letter in my hand—stated that when he was in command of a vessel sailing up the Red Sea, on one occasion when they got on the rocks, it was found out that the lascars were in such a state, under the influence of opium, that it was fortunate that the rising tide took his ship off the rocks as he had very little to hope for from his men. As long as the opium habit is kept within bounds, as I am thankful to say it is yet in India,—by outward respectability—no man being willing to be caught under the influence of it, or suddenly to be called up to do anything, and to feel that he is not ready to do it, the habit cannot be said to be visibly deleterious. But, it is to that fear, and, above all, the great self-respect which I am bound to say still remains in India, as far as my experience goes, both among the agricultural and the upper classes, that the freedom from this habit is to be traced. I am aware there are difficulties as regards Rajputana, but not having served there I will only speak of what I really know in reference to this. The only instance in which I can remember of any natives, of the better class connected with agriculture, being addicted to opium, was in two districts in the Meerut Division, and I found this out by their being in their villages at a time of the day when men should be out busily at their work, and these men were indulging in opium. The way the natives alluded to it to me was (in an undertone), when they said "I am afraid they are indulging in opium." Now, if there is any other point upon which I can give the Commission any further information, I am ready to do so, as my one object—and I would wish, my Lord, it to be stated—as a Government officer, in taking the part that I now am taking, and have done, is that I plead for India. It is possible to stop and to reduce the temptation to indulge in opium now, as I know it was to indulge in drink, if the facilities for taking it are removed.

712. Your statement so far has carried us to this—that the opium habit is not by any means universally, or I will even say generally, prevalent in India?—Certainly not.

713. But where that opium habit has taken possession of an individual it generally goes beyond the moderate use and with very injurious and fatal consequences. You have given a general statement to the effect that you feel regret that the opium trade has received a certain amount of countenance from the Government of India. The point I should like to interrogate you upon would be with reference to any proposals that you have to make of a practical nature, with reference to a change in the mode of dealing with the opium trade on the part of the Government of India. Have you anything to suggest on that point?—I could suggest that the opium be used and cultivated, and its cultivation alone permitted for medicinal purposes, as can be done under the supervision of Government, in much the same way that other drugs are cultivated at the Saharanpur Botanical Gardens, for medicinal purposes also.

714. Do you consider that such a regulation as you propose would be favourably received by the people of India?—I have no hesitation in saying, that as long as

it is done with due consideration for those who may have come under the influence of the drug, and are really its victims, this is quite possible; for the rest, as far as my experience goes, I have seen very very few natives from whom the drug could not be withheld with perfect safety. That is to say, they are not such victims to it as to make them liable to risk their lives by this withdrawal. Of course I am only alluding to those whom one meets with in ordinary society, and certainly not those who have drifted into the dregs of society through inability to work.

715. (Sir J. Lyall.) I did not quite understand what you said about stopping opium in jails—preventing people who are addicted to opium from using it in jails. Was it your custom when you were in charge of a jail to stop it altogether?—With reference to that, as the question has been put, I would say that Dr. Mouat—

716. I ask your practice, sir?—Dr. Mouat—

717. I do not ask anything about Dr. Mouat. I ask, please, what was your practice when you had charge of a jail?—I was in charge of a jail, and my practice was to act up to the orders I received from my superior officer—Dr. Mouat—and I certainly withheld opium from every case, taking care that there were no serious risks incurred. I did that in the first years of my service in India, but I lived long enough in India to know that while I might withhold it, I would be very sorry to draw any conclusion upon the supposition that no opium finds its way into the jail, and that I was drawing conclusions upon absolute fact instead of knowing that it was possible that the wealthy could obtain opium if they were prepared to pay for it.

718. But I believe the general practice is to dole it out in very small quantities to confirmed opium-smokers, and not to allow it at all to other people in jails?—Certainly, if there is any risk to life, opium is given to those cases alone.

719. As a rule, do you not think there would be any risk to life; it must be only in a case of very excessive use of opium, where a man has lost his appetite for everything else; it would be only in a case of that kind, I fancy, that there would be absolute risk to life. There would be great suffering, but there would not be risk to life, I think?—Well, I may say that in this paper (my letter in the "Lancet," of September 10th, 1892), you will see quotations from Government reports in which the following occurs:—Seesangur, Assam, 1862, "The sickness and mortality had increased during the year. Nearly all the deaths were from dysentery in worn out opium-eaters." The whole of these details are carefully given here."

720. That is not exactly an answer to my question. My question was, is it not the general idea among the medical profession in India, who have to deal with it as officers in charge of jails, that you can stop the use of opium without danger to life except in cases of very aggravated opium-eating, where a man comes into the jail already in a very low condition from the opium-eating habit?—Certainly.

721. In other cases you could stop it?—Certainly, in other cases you could stop it; but of course everything will depend upon the state of the man's health at the time. If he has a tendency to dysentery or diarrhoea, to stop the opium would simply be to expedite the fatal termination.

722. You have said that in your opinion opium-eating was inconsistent with self-respect among all Indians; did you say as much as that?—Yes.

723. How do you make that agree with the extensive prevalence of the opium-eating habit amongst all Rajputs in Rajputana?—I make it agree in this way—that I can remember when it was a sign of the greatest disreputability for anyone to drink spirits, but it has got to be so common lately that it has ceased to be disreputable by so many taking it now, and so opium-eating has almost assumed a species of respectability among the Rajputs. The difficulty, I think, is this, that as all take it, it is difficult for anyone to stand out alone; but it must be remembered that it is against their religion, and it is against the religion of any Mohammedan to take any opium or alcohol, or anything which intoxicates; and it is equally against his religion, to take little or much, as it is to take any at all.

724. Is it not the case that though they may think opium eating, to a certain extent, inconsistent with self-respect, they consider spirit drinking much more

inconsistent with self-respect?—On the principle that one shows disreputability outside and the other can be kept quietly in the house.

725. You talked about our Government encouraging opium and liquor, and of the fact being a public reproach to us in India. Do you happen to know what the prices of opium and liquor were when you first landed in India, and what the difference was when you left; you landed in India how many years ago?—1854.

726. Have you any idea what the difference in price is?—I am afraid I could not answer that; but I think I could answer the question by telling you how the liquor-shops were placed when I went to India, and how they were placed when I left India.

727. That is another thing; for instance, I can remember a time when any part of India (the India that I knew) spirits were to be got at about an anna and a half a bottle. For many years past you cannot get it for less than about 12 annas or one rupee?—It is less than that in the North-West Provinces.

728. But has not the tendency been always to increase the price, both of opium and of spirits since you have been in the country?—Certainly; and that has led to the addition of drugs to produce intoxication, which is the sole object that any native has for taking liquor at all, for as for taking it in the light of anyone taking liquor in this country, there is no such habit in India at all. A man only takes drink to be drunken; and he will bargain to be made drunk, and a careful addition of ganja will expedite this. The man has paid for the drunkenness to be produced, and this is done by previously adding ganja to the liquor presented for sale.

729. Is not that an argument that if you stop one door there you must stop all; that is if you stopped opium, for instance, you must stop spirits too?—I am very glad to say that I believe that entirely, and have done my best to carry it out; and I reported that liquor shops were put alongside the wells on the roadside, and I am glad to say it has been put a stop to. Liquor shops were put alongside the manufactories, and that also has been put a stop to. I do not suppose that any legislation will ever make a man give it up; but what I am anxious to see is that we will not do anything to tempt them to take it, and it would be the same with the opium. If a man can buy opium much as he would any other vegetable produced, excepting the license and quantity, he naturally concludes that the Government does not view it in the same light as they do it here, and they know now perfectly well, and many of them say, "Oh! it is a poison in England, and it is not a poison here." They see the distinction. Every person cannot get opium here; to say that it is to be got quite easily is a mistake. I know of a case the other day in which a girl took spirits of salt for suicidal purposes; but she had applied first at a chemist's with money to buy laudanum, and it would not be sold to her. That I know for a fact.

730. On the other hand, ordinarily speaking, there is nothing to prevent anybody getting laudanum or opium at a druggist's, if he wants to get it, unless there is some suspicion that he is going to use it to poison himself with it?—They must be known—every druggist knows, and they can tell, for they know who are in the habit of taking it. When I was in the Fens making inquiry regarding it, I found out it goes into the districts in carriers carts. Also that though the malaria has nearly ceased, the opium habit is far from uncommon. And with reference to that point, my Lord, I would wish to say that Orissa is a very remarkable illustration of the effects of famine in the district. I can remember Orissa in 1854 and the eight years after that, and I must say that I was under the impression that they were then not under the influence of opium at all; from what I have heard lately. At the meeting at the Society of Arts, it was stated that when the famine was present, indulgence in opium took great strides. That, I can quite understand, was due to the desire of the natives to take the drug to allay the pangs of hunger. With reference to any difference as regards races, I may say that during the whole of my service in India I have seen no difference as regards the effect of opium upon one race as differing from another. The whole difference really lies in the facilities that a person has for indulgence in the opium, and the opportunities of leisure. If he is hard at labour from morning till night, he knows perfectly well that to indulge in opium is to risk that hard labour, and that therefore has kept him clear, and I have little doubt that the difference in the action of the

opium in Burma differing from Orissa is really due to some cause like that—not that there is anything in the Burman that would make him different physically. I am not prepared to say morally—but the question is the opportunity and the leisure that is available to indulge in that which is a stimulant, because where I have seen those indulging in it, it was a habit of idleness, and the hard-working ryot of the North-Western Provinces has no time for idleness. He has to work hard, and he is, therefore, perfectly free from it.

731. You said you were two years in Central India, I think?—In Gwalior, yes.

732. That is not a large opium-using district?—Not as I saw it in a large military cantonment.

733. (Mr. Pease.) Do you say that there is no drug or medicine that can be given to these confirmed opium smokers which will cure them of the habit, that when they are confirmed opium smokers it is necessary to continue to give them a certain amount of it to preserve their lives?—I am afraid it is absolutely necessary in cases in which there is a susceptibility to diarrhoea or dysentery, which is only kept in check by the action of opium.

734. You have had some experience of the effects of opium I believe among the soldiers—would you give us the benefit of that experience?—No, I have not among the European soldiers.

735. Among the Sikh and Rajput soldiers?—Among them the only effect that I have seen, is that a man is very carefully watched by his comrades and by his superior native officers to know if he is one who indulges in opium, because it is possible that in times of trust, and in times of responsibility he may, practically unintentionally, from the craving coming on, place himself in a position in which his want of vigilance may be of serious consequence. Any man, or any regiment of men, (with reference to the question which has been put to me) who are dependent upon opium for sustaining their physique, are, in my opinion, my Lord, absolutely useless in the case of a great struggle.

736. (Sir J. Lyall.) You have not served, I think, with a Sikh regiment?—I have not served with a Sikh regiment.

737. And in the regiment you did serve with I think the men did not belong to a race which was in the habit of taking opium?—Opium was grown in those districts.

738. But it appears very few of them took opium?—40 or 50 years ago in India opium was grown up in the north-west, and many of these Sepoys were recruited in the north-west; and the experience of all who have served in districts where the opium is grown is that where opium is grown the tendency is to use it, and that is one of the reasons why the natives refuse to accept the money advanced, which is after all the point with regard to the cultivation of opium in India. Take away the money advances, and my experience in the North-West Provinces is that the native will not cultivate the poppy; it is too risky for the morality of his household, and it subjects him to the opium poppy search, which is a very powerful organ of oppression in the hands of under-paid officials.

739. No doubt money advance is an inducement to most of these cultivators; if they do not get an advance from Government, they get an advance from a native merchant, do they not?—I am sorry to say that nearly the whole of the cultivation of the Agra and Meerut Divisions is on advances. But then when the lender advances he takes it in kind, and is paid back from the crop; the natives, in their advances for poppy cultivation, receive not only large, but favourable advances. It may be under such favourable circumstances, that it is probable it is the money-lender who compels the ryot, in his state of impecuniosity, to accept this money advance to pay off his debts. But I know that in three districts, the Agra, the Muttra, and the Aligarh districts, the cultivators resolutely refused all advances to cultivate poppy; and yet these were the three districts decimated to my knowledge (for I was in the districts more than once) with a fatal type of fever. So decimated were these districts that the population fell very considerably in the 10 years from this malarial fever due to the irrigation; and yet if there was anything that would lead a native to take opium as a febrifuge, these men had every excuse for cultivating the poppy for the sake of keeping back a little for their own use as a protection against fever.

740. (Mr. Mowbray.) When you propose to prohibit the growth of opium except for medicinal purposes,

Brigade
Surgeon R.
Pringle, M.D.

13 Sept. 1893.

Brigade-
Surgeon R.
Pringle, M.D.

18 Sept. 1893.

do you regard it as a medicinal purpose to supply it in small quantities to those who have previously used it, and who could not do without it?—Only to prevent a fatal issue. I should only be justified in giving opium to prevent what I felt must be a fatal issue if the drug was entirely withdrawn.

741. You do not think that anything of the Burmese system of having a register of those who have been in the habit of using opium should be introduced?—That may be necessary. But in the districts in which I have served I am glad to say that it certainly is not at all necessary, as far as my observation and experience go.

742. (Sir W. Roberts.) I gathered from you that you looked upon the habitual use of opium very much as we look upon an habitual drunkard?—I am afraid I must have been misunderstood, for I see no point of comparison as regards India, except that indulgence in both is considered a disreputable habit.

743. Well, in that respect, as we regard a drunkard here as being a disgrace, there is no opium smoker who is not a disgrace in India?—No.

744. That is your impression?—Yes; that is my view.

745. So that the habitual use of opium in India is not at all like our habitual use of alcoholic beverages?—Am I to understand, sir, "habitual," without excess of indulgence?

746. Yes?—There is no such thing as habitual indulgence in alcohol in India, and anyone taking habitually to opium does it with the knowledge that he is jeopardising his position for respectability unless he is willing to be classed among people who have very little respectability to lose.

747. There is another point about the inferiority of opium as a febrifuge or prophylactic. Is it a possible

suggestion on your part that quinine might be supplied to these malarial districts by the Government and diminish in that way their reliance upon opium?—I am very glad, sir, you have alluded to that, because that is exactly the point on which I feel that the action of the Government deserves the greatest credit with reference to the outbreak of malaria over the portions of the North-West Provinces, when Sir John Strachey was Governor. It was my privilege to distribute large quantities of preparations of cinchona gratuitously, and I have no hesitation in saying the credit and the benefit conferred by that was such as really to put any substance like opium being given as a substitute perfectly out of the question.

748. That was during an epidemic?—During a very fatal epidemic of malarial fever more than once.

749. But where there is no special epidemic in these malarial districts is it possible that a supply of quinine could be placed at the disposal of the population?—I think, sir, it is not only possible, but perfectly practicable, with quinine at its present price. It is now reduced to nearly a rupee an ounce, and when I went to India it was sixteen.

750. (Sir J. Lyall.) Quinine has lately been given in the Punjab; we have provided large quantities of quinine in certain malarial districts?—And given at the very cheapest rates so as to encourage its being taken. If that were done, I think it would remove opium absolutely out of any possible category, either as a febrifuge or as a prophylactic; and there is room for a largely increased cultivation of cinchona, as I am told that in Ceylon it does not pay almost to cultivate cinchona, and if it does not pay to cultivate cinchona there, it would certainly pay the Government with reference to these malarial tracts where quinine is such a marvellous specific for fever, and the natives have such perfect confidence in it.

The witness withdrew.

Rev. W. S.
Swanson,
D.D.

Rev. W. S. SWANSON, D.D., called and examined.

751. (Chairman.) I understand that you have been in China in connexion with Presbyterian missions, and you were educated at a Scotch university, I believe?—The University of Edinburgh.

752. You have probably heard some of the previous witnesses?—I have.

753. Therefore you know the nature of the statements to us, and it is not necessary to repeat in full what has already been said. The great point is, that you with your authority, and with your experience, are here to confirm, in so far as you feel justified in doing so, what has already been stated; and of course if there are any new points you will add them. How long were you in China?—Over 20 years.

754. And in what parts of China?—In the southern part of the province of Fuh-kien.

755. Is that a province in which opium was grown in any quantities?—For 20 years of my life there, I never saw a poppy grown in the whole district. I used to go some 70 or 80 miles to the north of the city of Amoy, and 50 miles to the west, and about 60 or 70 miles to the south, and in the last year of my residence there I did see poppies grown.

756. When did you leave China?—In 1881.

757. Well, do you confirm what you heard said by these several witnesses with reference to the physical, moral, and social effects of the opium habit?—I do most fully.

758. And what are the opinions of the people in China themselves on the opium habit?—I have mixed with all classes of the people, my Lord, and I have never found a single Chinaman or a Chinese woman that did not say that opium was evil, and only evil, and that continually. I am thoroughly acquainted with the language of the people and have made myself acquainted with the conditions of their family and of their social life, and we often get the opinion of the people of China in a rhythmical couplet or triplet, and there is one rhythmical couplet that I may quote: "The man who smokes opium begins by selling his bedstead; he ends by selling his rice-bowl, and his chop-sticks, and then the two legs of him run away with one stomach." Between these extremes everything that a man has goes—house, lands, wives,

children; and I have again and again heard mothers say that when one of their sons begins to smoke opium, so far as they were concerned, he was dead to them. I have never heard any but one opinion; but I am bound to say this, that so far as my own Government is concerned, it has done nothing in China except what was a blessing to it, except in this one particular, and I am perfectly certain that, if this blot were taken away from us, we would have the Chinese people with a friendly feeling to Great Britain that that people possess to no other European country.

759. What action would you desire that the Indian Government would take with reference to the opium trade?—The entire suppression of the export of opium to China.

760. If that recommendation of yours could by possibility be adopted, what effect do you think it would have upon the attitude of the Chinese Government?—So far as the Chinese Government now is concerned, I should not like to say very much; but if you had asked me 20 years ago, I would have said without fail that the Chinese Government would have taken steps to put an end to the trade in their own country. I think even yet it is worth the trial; and it would do two things, it would set us right—the British Government—in the eyes of the Chinese people, and, in the second place, I think that the moral effect of it would be such as to force the Chinese Government to take some steps to protect their own people, because they know perfectly well, that so far as there is any public opinion in China, it is entirely and totally against the use of opium, and that those who are strongest in this opinion are victims of the habit.

761. Have you reason to apprehend that at the present time there is great laxity on the part of the Chinese Government and their officials in regard to the enforcement of rules and regulations limiting or prohibiting the use of opium?—I really could not say anything very definitely upon that point, but I can say definitely upon another point which bears upon it, that those officials say: "What is the use of us doing anything; what is the use of us doing anything here so long as we are compelled to receive this large import of opium from India? Stop that, and then we will do something; but what is the use of us doing anything so long as that is pressed upon us?"

762. They are no longer entitled to say that they are compelled to receive the opium?—I do not consider, my Lord, that they are free in any way. If the provisions of the Che-foo Convention are not carried out, then we fall back upon the old treaty. That is the position so far as I can apprehend it.

763. You are aware that Sir James Fergusson has disavowed, on the part of the Government, any intention to use pressure on the part of the British Government to impose the consumption of opium upon the Chinese?—"Pressure" is a word with a very wide meaning. There are several kinds of pressure. I do not believe that there might be military pressure, but there is another kind of pressure.

764. You know what the state of public opinion in this country is on the subject, do you not?—I do know; but I do not think that it is thoroughly awakened on the subject.

765. (*Mr. Pease.*) Have you ever heard the Chinese defend the practice?—I have never heard a single Chinaman, so far as Chinese Christians or heathens are concerned, defend the practice. Every single one of them condemns it; and I may mention for the information of the Commission, that about 12 months ago the Pope sent out a rescript to the Catholic Missionaries enjoining them to condone in no wise the participation of their Chinese converts in the opium habit.

766. (*Sir J. Lyall.*) How do you explain this growing prevalence of the habit accompanied by a general condemnation and detestation of it?—To the weakness of human nature—that is the way in which I explain it.

767. Is Chinese human nature especially weak?—It is especially weak on the point of opium.

768. In your experience of China, did you see any spirit drinking—dram drinking?—I have known of spirit drinking; but the Chinaman never goes to the street when he drinks spirits; he does it inside his own home, and it is a very rare thing to see a drunken Chinaman in the streets of a Chinese city. I am acquainted with three large cities, one that had 500,000 people in it before the rebels visited it; my own city, the city of Amoy with 250,000; and the city of Chin-chew with 300,000. I am thoroughly acquainted with them, and I have very seldom seen in them a drunken Chinaman. I know perfectly well that there was a great deal of drinking of the Chinese raw spirit; but it was always done in the privacy of their own homes. No one in China would compare the two for a moment; the tyranny of the one habit is entirely different from the tyranny of the other.

769. The Chinese raw spirit is, I think, a mild spirit, is it not?—No; it is the very opposite; it is a very coarse ardent spirit.

770. It is made from rice, is it not?—It is made from sweet potatoes to a large extent in our part of the country.

771. (*Sir W. Roberts.*) Are there tobacco smokers in China?—The Chinese are almost all tobacco smokers.

772. The tobacco-smoking habit is general in China?—Oh! I would go beyond that—universal I would say.

The witness withdrew.

Mr. D. MATHESON, called in and examined.

790. (*Chairman.*) We know your name well in connexion with Chinese commerce. You have been connected with a Chinese house of business, have you not?—Yes, I have. I went out to China in the year 1837, after a preparatory training in business, with the intention of entering the office of Jardine, Matheson, and Co., and with the probability in due time of being promoted if I was fit for it. The business then was carried on in Canton. A general business was carried on by the firm of Jardine, Matheson, and Co. They acted as commission agents in goods from all parts of the world, and besides that, they had a large business in the contraband opium trade. Being contraband, it was outside the Port of Canton. There was a receiving ship at the mouth of the Canton river which received the cargoes of opium from India, and then from the receiving ship the clippers carried cargoes to stations at different parts along the China coast.

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773. (*Sir J. Lyall.*) Among women and children?—I have not seen children smoking, and I have very seldom seen women smoking tobacco.

774. (*Mr. Pease.*) Would opium smokers smoke tobacco?—Yes, they do.

775. (*Chairman.*) Has any estimate been formed of the number of Chinese converts to Christianity?—In my own mission, which has been one of the most successful in China, we have about 4,000 persons in the full communion of our church.

776. Do you know what the figures are with regard to the other missions?—I should say somewhere about 50,000.

777. The total for the whole of China?—I should think so. I mean the Protestants.

778. And the Roman Catholics?—I cannot form any estimate of them. The Roman Catholic Mission with us is almost a purely traditional one. It is not aggressive; it has simply descended from previous generations. I have never met with a Roman Catholic priest that preached in the streets of any Chinese city. I have been acquainted with some of them, and have one or two of them amongst my own personal friends.

779. (*Sir W. Roberts.*) Are the converts drawn from one class of society, or pretty evenly?—The converts in every case are drawn principally from the agricultural and the artisan classes.

780. The artisan classes?—The artisan classes, yes.

781. Do many of the *literati* come within the influence of the missionaries?—A very few indeed. We would never have any trouble with the Chinese people, but for the *literati* and the mandarins. An ignorant people, they are hounded on by vile stories about our making *babies'* eyes into opium, and by other stories of that kind; but as far as the people themselves are concerned, I have moved up and down amongst them for 21 years and never was more kindly treated in my own country than I was treated in China.

782. But there are, I presume, some of the merchants, and of the higher shopkeeping class?—Not many with us. Our mission is almost entirely composed of the agricultural classes.

783. And artisans?—And artisans, but more of the former.

784. (*Sir J. Lyall.*) The peasantry?—They are all proprietors, the peasants there, of their own fields.

785. *Mr. Mowbray.* Is that so all over China?—I only speak of my own part of China. I would not dare to speak of any other part of China.

786. I mean the 4,000?—That is within the area which I have already indicated.

787. Exactly; it does not represent all your communion all over China in point of numbers?—We have, fortunately, confined ourselves to one part of China.

788. Well, then, it does practically represent your total strength?—Practically it represents the membership in connexion with the Presbyterian Mission of the Church of England.

789. (*Mr. Pease.*) There is a considerable number of adherents, I suppose?—Oh, twice as many, if not three times as many, and we have about three thousand at least of baptised children.

791. It was a smuggling trade; as described by you it was more or less a smuggling trade, the trade that the house conducted in opium?—It was, in a sense. I was going to explain, because I wish to do all credit to those who were then in business there. The opium was taken by the clippers to the different stations, and then at those stations the Chinese opium dealers came out and purchased the opium and paid silver for it as the most convenient medium. It will be seen, from what I have said, how easily the charge of smuggling was evaded by transferring it to the shoulders of the Chinese opium dealers.

792. They did the act of smuggling?—Yes, it reminds me of *Æsop's* fable about the boys and the frogs. The boys were amusing themselves by throwing stones at the frogs in a pond until a number of them were killed. At last a frog came to the top and said,

Rev. W. S.
Swanson,
D.D.

13 Sept. 1893.

Mr. D.
Matheson.

Mr. D.
Matheson.

13 Sept. 1893.

"Stop your cruel sport, for what is play, to you is death to us." And so in the same way what enriched the British merchants and the East India Company was death to the Chinese. This is merely an illustration of what was really the fact; it was smuggling, undoubtedly.

793. What is your opinion as to the effect of the opium habit upon the Chinese people?—I have not come to testify so much about that; but rather about the way in which the Government acted in the matter.

794. In the early stages?—Yes.

795. Of course it is of the past, but we would be glad to hear a brief statement from you about the circumstances connected with the seizure of the opium in 1839?—I will be quite brief, my Lord. The Emperor Taou-Kwang in the year 1839 became very uneasy about the spread of the opium traffic. I believe one of his sons had died of opium-smoking; but I am not quite sure if that is the case. The consequence was that edicts were issued all over the country that it should be put a stop to. As this failed, he took the course of sending Commissioner Lin to strike at the root of the evil, by imprisoning the merchants in Canton, and by compelling them to deliver up all the opium that was on the coast. I may say also that at the same time there was an order that all Chinese opium smokers should be punished by death, and I, myself, saw a Chinese opium smoker hanging on a cross in the agonies of death, only a little distance from the factories. We were imprisoned in the factories for a short time, until the whole of that opium was given up—all that was on the coast; and I was one of 16 who were specially marked out as being connected with the opium trade, but we were allowed to go on condition that we should never return to Canton again.

796. Have you anything further to say about the early history of the question?—Soon afterwards, in 1841, Hong Kong was occupied, and all the merchants, foreign and British, went to Hong Kong, and that became the depôt for opium, and the place from which the clippers were despatched to the coast—just as before, to the different stations on the coast.

797. From your experience at Canton and from your experience at Hong Kong, have you any recollection of any particular incidents that influenced the view that you took upon the opium question?—At that time I had not formed any opinion as to the character of the traffic. I tried to do my duty to the partners, and I did not think more about it. But in due time I was made a partner in Hong Kong, and then I felt a responsibility which brought questionings, and convictions upon my conscience that compelled me to say that I could not continue in this traffic.

One of the FIRST INCIDENTS was as follows:—I went in a clipper to visit Fuh-chow, one of the stations, and I was very much struck with this fact, that here were two opium-receiving ships selling opium to the people of Fuh-chow, and on the other hand there was the mission station and several missionaries working away trying to bring the same people to the knowledge of the truth. On going ashore, I was struck with the wretchedness of the people from opium-smoking, and with the two opposing forces—the opium trade on the one side, and the missions on the other. It was almost impossible to have any missionary work there at all, and I lately met with an extract from the letter of Archdeacon Wolfe, now at Fuh-chow, confirming this. He wrote in the year 1891:—"One of the towns held "as a mission station for 20 years or more by an "American Board of Missions has at last to be "abandoned, and, I think, very properly, for the "degradation of an opium-smoking town is of that "peculiar and intensely low and hardened type that, "humanly speaking, it seems almost impossible to "make any impression of a moral or spiritual nature "upon the inhabitants of a place given up to the "degrading vice of opium smoking."

A SECOND INCIDENT was:—I went down to see Singapore, and visited my friend Dr. Little, who was a leading doctor at that time. He showed me some of the opium dens and spoke of the terrible havoc opium-smoking was making among the Chinese population.

798. Is this recent?—No, but it goes on now. I believe the principal revenue for the support of Singapore comes from opium and drink.

799. But what you saw was some years ago?—Yes, many years ago. Then I have often spoken to the Chinese, who have said that the vice is just as bad as

it can be, and I remember one opium dealer coming to me to buy opium, who remarked: "the people say "that the man who is a smoker of opium is making his "coffin." He was doing so himself.

A THIRD INCIDENT was:—When managing partner for a short time I sent a man to Bombay to be an inspector of opium before shipment to China. He was a fine young fellow and we had great confidence in him. He did his work well, but after two years he began to get emaciated and miserable-looking, he was an opium victim, and at last he was obliged to give up his employment, and I do not suppose that he had long to live. I felt it rather on my conscience.

A FOURTH INCIDENT:—In 1847 when I was partner one of our clippers on the coast was boarded by pirates and plundered, and the officers were murdered and nearly all the crew. There was a notice in the newspapers of it, and they said that the opium clipper and the cargo belonged to myself, instead of using the name of the firm. I thought it was rather unfair to do that, but it stung my conscience, and convinced me that as a Christian I could no longer continue in the opium traffic. It was intolerable to me to continue in such a business, and I sent home my resignation to the senior partner who was in this country. I left China finally in 1849.

800-1. What is your recommendation with reference to the policy you would like to see adopted by the Government of India in relation to opium?—Well, it would be very like what others have said. I should wish to sweep away the poppy plantations from the plains of India and to sweep away that unrighteous and paltry revenue of four millions, and then to give India the opportunity of a new career of prosperity, which would also give the same to China and allow of her taking a great deal more of British manufactures than she has been doing in the past. And we have a remarkable illustration of that I think. There is Burmah on the one side of China, and Japan on the other. Opium in Burmah is giving constant trouble now: whereas Japan, in having secured its exclusion by treaty, is pursuing a prosperous career.

802. Are there any other observations that you would like to make?—I did wish to say that when the opium was given up under Taou-Kwang it was a heroic attempt on the part of a Government ignorant of international law, but it was a sad failure. The opium merchants appealed to our Home Government, and a succession of grievous wars began, slaying thousands of innocent Chinese, from 1841 to 1858, when opium was finally legalised by the treaty of Tientsin, and the United States Minister said on that occasion to the Bishop of Victoria, "It is the triumph of successful crime." Let me add that during the first war of 1841 the British nation was struck to the heart by the terrible disaster of the Cabul massacre, and in the year 1857-8—when opium was legalised—the British nation was agonised by that terrible Indian mutiny. I do not make any reflections in the matter, but that is so. Then I just wish to add that Lord Shaftesbury, who took a great interest in the question, said, "The opium "traffic is a sin and a shame to this country. Do not "cease to testify to this. Sooner or later they will "have to give it up. It is a sin and a shame." I was struck with those words and I have never forgotten them, and I trust we shall go on endeavouring to get this matter put right.

803. (Sir J. Lyall.) I have seen it stated that the opium-smuggling system, which you began your evidence by describing, gave rise to a great deal of piracy, and that that was one of the bad features of it; can you explain how that was?—The valuable cargoes of opium were a great temptation to pirates. There was an enormous number of pirates. When our navy was there I think they destroyed about 250 pirate ships.

804. They were looking out for these clippers?—Yes. I wish to say, by the way, which I did not before, that the houses of Jardine, Matheson, and Co. and Dent and Co., who had nearly the whole of this coast business, were honourable men, and that the captains of the clippers and the receiving ships were honourable men. We must not suppose that they were a lot of scoundrels or buccaneers or anything of that sort. The Chinese opium dealers bribed the mandarins always, and things went quietly and smoothly, and the only people that the clippers had to be afraid of were those pirates; and, as I told you, one of those clippers, the "Omega," was plundered and nearly the whole of the crew murdered.

Mr. D.
Matheson.
18 Sept. 1893.

805. Everybody, I think, at the present day is sorry, so far as it is true you know, that force was ever used to open the Chinese market to opium; but do you not think as a merchant that it would be enough to make the Chinese Government now absolutely free to prohibit the import of opium, or do you think it necessary to go further?—I should be very sorry if the Indian Government did not take the first step and endeavour to cease to grow the opium.

806. Part of the opium exported from India is grown directly under the direction of the Government?—Yes.

807. But a great part is merely the growth as it were of the native States, which has been always more or less exported to China and other countries from time preceding our rule even?—But they are also under the Government influence; they must grow so much or so little according as it is wanted.

808. No, they may grow as much as ever they like?—I was under the impression that considerable influence was brought to bear upon them.

809. (Mr. Pease.) If we lowered the tariff that would induce them to grow it?—Yes.

810. (Sir J. Lyall.) We began by putting on a very low tariff upon it originally. It began at 125, it went up to 175, and has gone on gradually to 400, 500, 600, and sometimes it has been 700. Now it has gone back again. Would it not be a very unusual thing for a Government to absolutely stop the export of an article of commerce?—Well, it is the immorality of the thing, that is the question.

811. You think that the immorality of the thing would justify that course?—Certainly.

812. But would not the same ground of immorality then make it obligatory upon the English Government to stop the export of spirits?—There is no comparison; they would not compare at all.

813. No comparison in Africa, for instance?—Oh, well, the natives of Africa have no power of self control.

814. No comparison in Australia and New Zealand, where a population has been actually wiped off the ground by the use of spirits?—I will not allow in my own mind any comparison between spirits and opium. Opium is a curse. Spirits can be used in moderation; opium cannot.

815. We know that spirits have swept populations absolutely out of existence in various parts of the world?—Yes, those poor and ignorant savages.

816. Well then would not the same grounds—I may say the same moral grounds—make it incumbent upon us to stop the export of spirits; and I suppose nothing has done greater harm in India under our rule, particularly in more recent years, than the growth of the habit of drinking wine and spirits among the upper

classes in India?—We know that that is only in moderation; at all events, it is perhaps like the drinking of wine 30 or 40 or 50 years ago—when gentlemen sat down to the table with their wine. That fashion is going out now, and I suppose it is only the same thing in India with the upper classes, but I am not sufficiently acquainted with India to speak with confidence as to that.

817. A missionary gentleman who gave evidence just now said, that the Chinese were weaker in those respects than we are: that is in resisting any kind of intoxication, that if they did use it at all they used it to excess?—I think he meant chiefly the opium.

818. Well, he said it of all, and Dr. Pringle said the same thing of the Indians, that is, he said it was equally the case with them, whether it was wine or whether it was opium, or whether it was hemp, they never took it except to get drunk?—Yes, of opium and hemp.

819. That being the case is there any strong line of distinction between the morality of allowing wine and spirits to be exported from England, and our allowing for instance the Malwa opium to be exported to China?—I think there is a very wide difference. Hemp, of course, does not go with the whiskey, it goes with the opium, the hemp is used to make the opium more deadly.

820. Is there not one incident in which our practice in India as regards, for instance the Malwa opium stands out in a very advantageous light in comparison to the English practice of importing spirits. I mean, I think in England when spirits are exported they are exported free of duty, the duty is not imposed; in India when the Malwa opium is exported it is subject to a very heavy duty?—Well, that does the Indian revenue a great deal of good.

821. Yes, but if that, I mean to say, is morally wrong, surely it is still more morally wrong to export spirits free of duty?—I cannot put spirits and opium together at all.

822. (Mr. Pease.) You are aware, I think Mr. Matheson, that the English Government have recognised their responsibility by prohibiting the importation of spirits in Africa, as parties to the Brussels Anti-Slavery Convention?—Yes, the people in Africa are of course of a very low type.

823. The English Government has placed the restriction upon the importation as parties to that convention?—Yes.

824. I believe by your obedience to your convictions upon this question of opium, you have prejudiced your own pecuniary position to a very considerable extent. That is so, is it not?—Well, as far as that goes it has, but it has not injured my position in society I hope.

The witness withdrew.

Dr. WILLIAM GAULD called in and examined.

825. (Chairman.) You are a medical missionary, are you not? Sir William Roberts has kindly undertaken to conduct your examination?—I am.

826. (Sir W. Roberts.) Where was your experience?—At Swatow, in the Canton province.

827. Is it confined to China?—Well, the last 12 years I have been in London in medical work, in charge of the Mildmay Hospital, Bethnal Green.

828. You have no experience of India?—No experience of India.

829. But you have some years' experience at Swatow?—I was for 16 years a missionary in Swatow, with an interval of two years home on furlough between.

830. Had you a dispensary there?—I had a hospital there with the largest in-patient practice of any hospital at that time in China.

831. It was not merely an outdoor dispensary?—No, I had a dispensary practice as well; the last year I was in China, we had over 2,000 in-patients in the year.

832. You were, in fact, engaged in these duties continuously all that time?—All that time.

833. What is your experience in regard to the use of opium; was it very prevalent there?—It was very prevalent in some parts of the district. It was very pre-

valent amongst the literary classes and the Mandarin classes. It was almost universal among the chair coolies, and we could scarcely get a teacher who did not smoke opium.

834. It was what you would call a generalised habit then?—It was very largely prevalent, but not so prevalent as in some parts of China.

835. Scarcely so prevalent as drinking beer in this country?—Not so prevalent as drinking beer, I should say.

836. In what ways did you find that the Chinamen used opium?—They used it chiefly in smoking a prepared mixture of the opium, and I may mention that at Swatow it was almost wholly Indian opium that was used, scarcely any native opium, when I first went to China; it is 13 years since I left. There were times when the Chinese opium smokers could not get their opium, and then they bought pills or morphia to tide them over the difficulty; for instance, one year we sold about 50,000 pills at our mission, ostensibly to cure opium smoking, but I found after a while that these pills were not to such an extent used to cure opium smoking as to warrant me to go on selling them to the Chinese. I never charged anything for any other drugs, but for these pills we charged them, simply because they had the money to spend on opium,

Dr.
W. Gauld.

13 Sept. 1893.

and we thought it right to charge them for the pills which they wanted to cure it. But we found a large number of these pills were used simply to tide them over a difficulty. I think that is important in connexion with this—it has been a question whether smoking opium has the same effect as eating opium. Now, as a matter of fact, the craving for the opium is allayed by the eating of these opium pills, and by the eating of morphia, and the use of morphia is largely increasing in China. I may say in that connexion that from one of our leading firms of druggists, one of the partners of that firm says 50,000 ounces of morphia are sent out in one year to China.

837. I daresay you are aware that it has been said that it is impossible as to opium, that the alkaloid of the opium—morphia—can be taken in by smoking?—I believe that is the theory. At the same time we know that there are other alkaloids in opium besides the morphia, and the fact remains that whatever of the opium is non-volatile there is still enough left to do the mischief, because that we see before our eyes. The fact that a craving is aroused of such an intense kind by the smoking of opium, which craving is allayed by other preparations of opium, shows that in essence the nature of these is the same; they may not be the same in degree but they are the same in essence.

838. Has it been suggested that it may be partly carried mechanically?—I never heard any statement to that effect.

839. No explanation has been given in fact?—No; but the fact remains.

840. The fact remains?—Yes.

841. Then these habits are really in your view interchangeable?—I believe they are.

842. Morphia eating?—Morphia eating and opium smoking and opium eating.

843. Would you regard that fact as having a bearing on the mischief done by the opium habit?—I do not exactly understand your question, sir.

844. Well this is the question: What is the importance of this in considering the evil of the opium habit?—I have already given my explanation of that in saying that the different kinds of opium have the same effect essentially on the system, and that it is not sufficient to say that because morphia is non-volatile therefore the opium does no harm; something in the opium does the harm.

845. It may be some allied alkaloid produced by the heat on morphia?—Yes.

846. Now what experience have you had of malaria: is Swatow a malarial district?—It is; there is a great deal of malaria in the district.

847. Do you think that the use of opium there is practised in any way as a prophylactic or prohibitive against fever?—As a prophylactic I do not think it is in existence practically, and as a cure for malaria I think it is very little used. The natives use different kinds of drugs for their fevers, and what they do use is so inefficient that they are only too glad to get our quinine.

848. Then in your experience opium smoking is not a prophylactic against malaria?—I do not think so; more than that, I think the opium smoker when he does take the fever is less likely to get well over it than a man who does not smoke opium.

849. What is your opinion of opium smoking on the literary class; you said that a good number of them smoked?—It is very prevalent amongst them. I have a letter which has lately been received from one of our ablest missionaries at Swatow, a man who is not at all given to exaggerated statements, and he mentions one or two facts which it will not take longer than a minute or two to read.

850. We shall be very glad to hear them?—He says: "If you are not tired of facts about opium, I will note one or two incidents of the last few days." (This letter was written on the 1st August.) "1. A young non-Christian teacher of the language was lately employed here. He had been staying away for some days from his work. I sent to inquire the cause, he having sent a message to say that he was ill. The Chinese here did not think his word could be taken for it, 'for he is an opium smoker.'" (That is their remark.) "A man was therefore sent to see. His report was, 'He says he is ill.' I asked, 'Is he ill.' Answer, 'an opium-smoking man, how can I

'tell?' 'Did he seem ill?' 'A man who smokes "opium as he does is always ill.'" (That was the native verdict.) "2. Another teacher, my own writer, who is an opium smoker, has been absent for a week from his work. He is assisting me in Scripture translation, and his Chinese scholarship and tact make him indispensable to me. His illness is the direct and significant result of opium smoking. It is accompanied with a complete lack of rallying power, which is another of the characteristic results of the habit. 3. A Chinese friend, not a Christian, or rather not a Church member, wrote to me the other day, asking me to get the mission to undertake the guardianship of two of his sons, and the management of the funds which he is providing to meet the expense of giving them a good English education. He is not likely to live long, and says he cannot trust his Chinese friends, but has complete confidence in us. The sons whom he wishes to commit to our care are the two youngest, and his chief anxiety is so to arrange matters that the money shall not come into the power of his eldest son; and why does he so distrust the son? Because, although he is not a regular opium smoker, he has begun to take it occasionally" (I think that is an important point), "and 'therefore,' says the father, 'he is no longer of any use, and if 'he got control of the money would speedily squander it,'" (that is his idea of a son who is only beginning to take it). "For this reason the father deliberately chooses to will the bulk of his money out of the family, and to leave it to the care of the missionaries, as the only way of securing that the youngest boys shall, after his death, get the benefit of it." One instance more: "4. Just as I write a fourth instance occurs. I learn that another teacher on our staff is also absent from illness. When he first came to the mission he was a rather heavy smoker of opium. He was thin and emaciated, with a bad colour. After a time he was induced to break off the habit. With the help of special treatment in our hospital he succeeded in doing so, after a period of struggle and severe suffering. An immediate and very marked improvement in his appearance was the result. He became fatter, and a new look of health and energy appeared in his features. No one who knew him could fail to notice the change. This went on for two or three years until, in an evil moment, he was tempted to resort to opium again for relief from some temporary pain. The habit returned, and his healthy look disappeared again. His health became unsatisfactory and uncertain. He would fain have back his liberty, and speaks of trying to recovering it, but it will cost him a harder struggle even than before. With three teachers disabled in our staff, we ourselves lose much time, and suffer not a little inconvenience. Why then do we employ opium smokers? Partly, I am sorry to say, because it is difficult to find a literary man here who is not an opium smoker, and partly because employment by foreigners, especially in a sea-port town like Swatow, is not much coveted, and men in an independent position will not come. We can only command the services of men to whom the small salary we give is a strong inducement, and such men are nearly always opium smokers, men who have forfeited their independence, and are under strong compulsion to find money wherever they can. The smoker is heavily handicapped." That is a letter written in the beginning of August last.

851. Is it your own experience that the literary classes are a good deal addicted to opium smoking?—Yes, most of the literary men that I came across in my experience at Swatow were addicted to opium smoking.

852. I suppose you could not possibly give us any general idea in per-centages?—No, I cannot give per-centages. I remember on one occasion asking a patient what was the proportion in his village smoking opium. He said "Ten per cent. of the adult males."

853. Have you noticed whether among the opium smokers at Swatow there are some who smoke opium regularly but moderately?—The term *moderate* is misapplied when used in reference to opium smoking. I think that in that respect opium essentially differs from alcohol. I do not think that we would hold wine, for instance, to be a poison in itself, or beer, but I hold that opium is a poison, essentially a poison, and that there is no moderate use of it apart from what is used as medicine, that the moment a healthy man takes opium he has taken something that will injure him.

854. Apart from theory is that your experience?—That is my experience, and there is a peculiar seduc-

tion about opium which carries a man very rapidly into the habitual use of it. I can sympathise with a man because in my own experience, before I left Swatow the first time, to come home, I was ill from chronic dysentery, and for a good many nights I had to take an opiate medicinally. I determined to stop it. The first night I stopped it I remember the perfect misery I was in, the utter feeling of helplessness and misery all over, as if I were going to die. I know what it is in opium smokers, when that was my own experience from one little dose a day for some time.

855. You would not recognise that the effects of opium on one race differs very profoundly from the effect of opium on another?—I do not believe it does; I believe that its effect in different races may differ in degree, but not in essence.

856. In that respect it must differ very much from alcohol?—I think it does differ from alcohol, and that brings up a point which I think my experience of the past 12 years enables me to speak upon with some confidence. It has been said that opium and liquor are of the same nature, and that the one is as bad as the other or as good as the other. Now, I have been working for the last 12 years in Bethnal Green, in one of the worst slums in London, and I have seen what drink is. I am not here to say that drink is a good thing; it is a horribly bad thing there, and I could not speak too strongly upon it, but the difference between the hold which opium has and alcohol has upon the human being is not to be compared. I remember a Chinese graduate coming to me at Swatow once, he was one of the leading men of his village. He came and stayed in the hospital and asked me to try and get him cured of the opium habit. He had been smoking for a long time, and I did my best, but the man, in spite of all my efforts, was brought to death's door and his misery was great. He was evidently dying. I said you cannot go on with this, you must have your opium pipe, or you will die. He got his pipe and he recovered. Again he came to me and said "I want you to cure me of this opium." I said "Graduate, you saw how it was before. You were at death's door, I dare not venture. I will not take the responsibility." "Well," he said, "I will take the responsibility, whether I live or die, try and get me cured of this opium." We tried again, and I am happy to say that by care and nursing and drugs, he did get round; he recovered from his opium habit, but the suffering of that man from intense irritability, diarrhoea, feverishness, and sleeplessness was very great. I do not wish to see again anything of the kind. That is with the opium. Then with regard to the alcohol, I believe I have got down at Bethnal Green specimens of drunkards of the very worst type, men and women saturated with drink. When they come into the hospital, we at once cut off the alcohol—it is as nearly as possible (being right in the slum) a temperance hospital. We only use alcohol in rare cases. We cut off the alcohol at once, and I have never seen any apparent distress from doing so like what I have seen in China

with the opium, and I hold that the opium takes such a grip of the system as alcohol never does.

857. Even in those persons who use opium moderately, habitually, it is difficult?—The smaller the quantity, of course, the less the mischief, but there is mischief, and the longer they use it, the larger the quantity they use as a rule. It shows itself in the sallowness of the complexion and the appearance of the eye, and emaciation eventually. I remember a young man coming to me in a dying state. He died of uncontrollable diarrhoea in a few hours, just simply from excessive opium smoking, nothing else.

858. I suppose you confirm the evidence that we have had before, that there have been no organic diseases like cirrhosis, or other degenerations with opium as with alcohol?—The appearance of the confirmed opium smoker, the hectic look, and the dark blue of his lips, and the jaundiced look of the eye, show that there must be some disorganisation somewhere. I do not think that it has been as yet scientifically gone into. I do not think any medical missionary has as yet gone into that investigation, as to whether there are particular diseases caused by the opium alone, but the opium smoker is more ready to fall a victim to diseases than the healthy man.

859. I presume that you found that your missionary labours were rendered more difficult by the prevalence of the opium habit?—They were so. In the winter time I have very often left my hospital for a time in charge of the native assistants of my own training, and travelled into the country with a brother missionary, a preacher. We used to preach in the open air, in the towns and villages, and almost invariably there would be someone in the crowd who would start this objection about the opium, "You bring us the opium, why do you come to teach us righteousness?"

860. I mean, you did not think it was what you might call a specious or colloquial objection?—No, they really felt it, I believe. The large part of the hatred the Chinese have to us is owing to this opium question. I remember, as an illustration of how they connected opium with the English nation, one day in the street opposite the hospital door there was a man selling beautifully-made figures, all nicely painted, of Chinese warriors and others. Amongst them there was one figure of an Englishman with an umbrella over his head (they usually associate us with the umbrella used as a protection from the sun), and in his other hand he had a large ball of opium. That was the idea of the Englishman in the mind of the Chinese.

861. That was at Swatow?—A ball of opium in one hand, and in the other an umbrella. That was how he was represented to the crowd.

862. I think you said that the opium used at Swatow was Indian opium?—It was Indian opium. I think now it is mixed, but at that time it was Indian opium.

863. Have you any further statement that you would like to make to the Commission?—No, sir, I think that is all I wish to say.

The witness withdrew.

Adjourned till to-morrow at 11 a.m.

At the House of Lords, Westminster, S.W.

FOURTH DAY.

Thursday, 15th September 1893.

PRESENT:

THE RIGHT HONOURABLE LORD BRASSEY, K.C.B.

Sir JAMES B. LYALL, G.C.I.E.
Sir WILLIAM ROBERTS, M.D.
Mr. R. G. C. MOWBRAY, M.P.

Mr. ARTHUR PEASE.
Mr. H. J. WILSON, M.P.

Sir CHARLES E. BERNARD, K.C.S.I.,
Acting Secretary.

Sir JOHN STRACHEY, G.C.S.I., Member of the Council of India, called and examined.

864. (*Chairman.*) You have had a long residence in India, I believe?—Yes.

865. How many years were you there?—About 38 years.

866. And you have filled numerous posts, ultimately reaching the very highest posts in the service?—It is hardly an exaggeration to say that I filled pretty well every post that a member of the Civil Service

Dr. W. Gauld

8 Sept. 1893.

Sir
J. Strachey,
G.C.S.I.

15 Sept. 1893.

Sir
J. Strachey,
G.C.S.I.

15 Sept. 1893.

could fill, from the most subordinate posts to those of a district officer, and commissioner, and chief commissioner of Oudh, and Lieutenant-Governor of the North-West Provinces, and I was twice Member of Council; altogether I was nine years a member of the Government of India, and for the last eight years I have been a member of the Council of India.

867. It goes without saying that you have been brought into personal communication with all classes of our native fellow subjects in India?—Yes, I ought rather to say the parts of India with which I have been personally acquainted. I have never been in Bombay or Madras except passing through.

868. Still you have had very wide opportunities of being brought into personal communication with the natives of India?—Certainly.

869. Can you give us, before you turn to other subjects, any statistics of the opium revenue, or shall we obtain that through another witness?—I think I can give evidence upon that point regarding the revenue.

870. Your last post in India was in charge of the finance, was it not?—Yes.

871. Well, having been in charge of the finance in India, it has necessarily been your duty to consider the question which is before the Commission in all its bearings, and we should be glad to hear your views on the various matters which are included in the Order of Reference to the Commission. We will take first the general question. I believe your views were comprehensively stated in the memorandum which you wrote on the occasion of the reading of a paper on the opium question by Mr. Batten, which paper was read before the Society of Arts in April last?—Yes; if you would allow that to be read I do not think that I could express my opinion on the general subject more fully than I did then.

872. I know that you have been kind enough to attend to-day at considerable personal inconvenience, and the Commission would be glad to lighten your labours in every possible way; and understanding as we do that that memorandum represents your views on the general question, I think it would be a relief to you and very advantageous to the Commission that the memorandum should be read to us?—Yes.

Sir C. Bernard read the memorandum, which was as follows:—

"I passed some thirty-eight years of my life in India, and I should not be very greatly exaggerating if I were to say that, during that time, I held almost every office which a member of the Civil Service in India can hold, beginning from offices of little importance to the very highest posts in the service of the State. I was brought into personal communication with all classes, from the greatest princes to the humblest ryots. I am entitled to say that I can speak with some knowledge of the facts, as they regard the people of India and the policy of the Government. Now, I have always felt in regard to this controversy that the object to be aimed at is to learn the truth and to act upon it. Thousands of excellent people in this country, of whom I desire to speak with all respect, because although I know them to be mistaken, I must fully recognise the perfect honesty and nobility of their aims, believe that we are ruining with a horrible poison millions of Chinese, and that, not content with this iniquity, we are encouraging the consumption of opium among our own subjects in India with similar terrible consequences. If this were true, I should say for my part that whatever might be the results to the Government or to the people, pecuniary, or economical, or political, or otherwise, however difficult or dangerous it might be to find substitutes for the loss that the suppression of opium cultivation in India might entail, there could be no doubt about our duty. I am confident that when Mr. Batten tells us that the total value of the poppy crops of India exceeds 13,000,000*l.* sterling a year, he understates rather than overstates the fact. I know that all that Sir Lepel Griffin has told us about Sikhs and Rajputs—the most martial races of India—and the political dangers that would follow on the attempt to interfere with the consumption of opium, to which they have been accustomed for centuries, is perfectly true. Nevertheless, if I believed that the Government was committing the abominable iniquity with which it is charged, of demoralising and destroying millions of people, I should say that, whatever be the consequences, this iniquity ought not to be allowed to last for a single day during which we can prevent it. But what are the facts? It is impossible for me now to enter into the evidence

on which my conclusions have been based. I can only give the conclusions themselves, which the experience of a lifetime has impressed upon me. I believe it to be proved to demonstration that opium is not this terrible poison. The vast majority of those who consume it consume it in moderation, and so consumed there is no one of the stimulants that enter largely into the consumption of the world that is more innocent. I will go further, and say more beneficial. It is as innocent as the wines of France or Italy are to the people of those countries, or as undoctored beer is to the people of England or Germany. Like all other good gifts of nature, it may be abused, but even when this happens, whatever it may be to the individual, it is less harmful to society than the alcohol, which is the curse of our own country. This opium question has two aspects; one as it concerns the people of India, the other as it concerns the Chinese. As regards the people of India generally, I would ask you first to remember what India is. It is a vast continent as large as the whole of civilised Europe, with a greater population, for it contains some 280,000,000 of people. It consists of a multitude of countries differing from each other far more widely than the countries of Europe differ among themselves. In some of those countries, as we have been told, and as I shall have again to mention, certain classes of the people have from time immemorial consumed opium. But these classes constitute, numerically, an absolutely insignificant proportion of the population of India. Speaking in general terms, the consumption of opium in India is so infinitesimally small, that I may say, without exaggeration, that no opium question exists at all. We are told, however, that the consumption of opium has been rapidly increasing, and that it has been fostered by our Government. These statements are absolutely baseless. The increase of population under British rule has been enormous; but there is every reason to believe that the consumption of opium in India, under native rule, 150 years ago, was actually greater than it is now. However this may be, and without attempting to go back to times of which we know comparatively little, this at least is certain, that, although the population goes on rapidly increasing, the consumption of opium, instead of increasing, has diminished. It is certainly smaller now than it was, for instance, ten years ago. This has been the result of the policy of the Government of India. By a vigorous system of excise, it raises the price of opium as far as is consistent with the prevention of extensive smuggling, and reduces consumption to a minimum. The sole present danger is that this policy may be carried too far; and some authorities believe that this is already happening. The danger is that by making opium too dear and difficult to obtain, we may not only encourage smuggling, a comparatively small evil, but may cause people who have been content with the moderate use of opium to have recourse to cheap and noxious stimulants procurable from weeds which, I may almost say, grow near every man's door. Although, as I have said, the consumption of opium by the people of India generally is infinitesimally small, it has been consumed for centuries by certain classes in Northern India. It is an indisputable fact, as Sir Lepel Griffin has told us, that these classes, especially the Rajputs and Sikhs, are precisely the finest races physically in all India. I have often thought that the best practical answer to those who inveigh against the use of opium would be, if such a thing were practicable, to bring one of our crack opium-drinking Sikh regiments to London, and exhibit them in Hyde Park. There is no more vigorous, manly, handsome race of men to be found, not only in India, but in the world. They are the flower of our Indian army, and one of the bulwarks of our empire, and yet the use of opium among them is almost universal. It has always seemed to me a significant fact that among all the passionate appeals to British ignorance, we never hear one word about the Sikhs. We hear a great deal about so-called opium dens, which, after all, are very few and far between, but we hear nothing about the constant consumption of opium among the finest populations of India. People talk glibly about suppressing by law the growth and consumption of opium in India. I have great faith in the power of folly and ignorance, but I trust that I may not see the day when the attempt is made to deprive Sikhs and Rajputs of—I will not say a luxury—but one of the innocent and beneficial necessities of their lives. I read the other day, referring to this subject, some remarks by a most accomplished writer, who speaks of Indian subjects with high authority—I hope Sir William Hunter

will pardon me for quoting him. He said that a law such as that to which I have just referred could only be enforced in British territories, by bloodshed and arms, while in native States it could not be enforced at all. I might enlarge much more on such considerations. They involve issues of political gravity, the existence of which appears to be unknown and unsuspected in this country. I repeat, however, that these classes which consume opium, highly important as they are politically, are numerically an insignificant fraction of the Indian population, and that, so far as the people of India generally are concerned, no opium question really exists. I must now say something about China; but Mr. Batten and other gentlemen, who have spoken with the highest authority, have said so much on this part of the subject that I shall add very little, and I can add really nothing that is new. There can be no greater delusion than to suppose that China depends on India for her supply of opium. If no opium were exported from India, the consumption of China would remain practically unchanged. Indian opium in China is a luxury of the comparatively rich. If they were deprived of it, they would suffer as the richer classes would suffer here if they were deprived of the choicest vintages of Bordeaux and Burgundy, or if tobacco smokers got no more cigars from Cuba. In such a case, in this country, the frequenters of beer-shops and gin-palaces would be conscious of no hardship; and the population of China would be equally unconscious if it received no opium from India. A single province of China produces more opium than the whole Indian Empire. Whole provinces are covered with the poppy; the cultivation goes on increasing, without any interference on the part of the Government of China. Even, therefore, if it were true that the people of China are being ruined by opium, the cessation of imports from India would not diminish the evil. But it is certainly not true. The vast majority of the consumers of opium in China consume it in moderation; and it is, as I said before, as harmless as the wine and beer of Europe. Moreover, as Mr. Batten has told us, if the Government of China should wish to undertake the task of stopping the consumption of opium, and preventing the importation of opium from India, it can do so if it pleases. It can prohibit the importation, or can impose any restrictions that it likes. Meanwhile, there is nothing with which we need reproach ourselves. If, as I wrote myself some years ago, India is, in deference to ignorant prejudices, deprived of the revenues which she now obtains from opium, an act of folly and injustice will be perpetrated as gross as any that has ever been inflicted by a foreign Government on a subject nation. India now possesses the rare fortune of obtaining from one of her native products a great revenue, without the imposition of taxes on her own people; and we are asked to sacrifice the manifest and vital interests of those people, to whose good we are pledged by the highest duties, in hope of protecting others, against their will, from imaginary evils; in other words, to inflict certain injury in pursuit of a benevolent chimera, which must elude us. Truly, to use the words of Condorcet, 'L'enthousiasme ignorant est la plus terrible des bêtes féroces.' I wish to say only one thing more, and it is that with which I began: what we want is the truth. How, I may be asked, if this widely-spread belief regarding India is erroneous, what is the explanation of its prevalence? My answer is, that the ignorance that prevails in this country regarding everything Indian is enormous. The ignorance about opium is on all fours with the ignorance on every other subject connected with India, and this ignorance is not confined to those who we expect to be ignorant, but extends to the most highly educated classes. It extends to all Indian subjects, history, geography, the condition and habits of the people, the constitution of the Government, in fact to everything. I will give an illustration which always seems to me to have an useful bearing on this opium question. There are many curious delusions about India which it seems impossible to kill. When I hear educated Englishmen talking about opium, I am often reminded of some admirable remarks of Sir Henry Maine on Mr. Buckle's 'History of Civilisation.' Mr. Buckle derives all the distinctive institutions of India, and the peculiarities of its people, from the fact that the exclusive food of the natives of India is rice. It follows from this, he tells us, that caste prevails, that oppression is rife, that rents are high, and that customs and law are stereotyped. I have no doubt that if Mr. Buckle had been asked he would have said that the same cause accounted for the consumption of opium in India. I sometimes ask my

English friends when they talk about opium what they suppose to be the ordinary food of the people of India. The almost universal answer given, perhaps with some air of displeasure that they should be asked such a foolish question, is that of course it is rice. I believe that nine-tenths of the educated men and women of this country believe this to be true. When they have not learnt such an elementary fact as this, that throughout the greater part of India rice is no more the ordinary food of the people than it is in England, how can we be surprised if they do not know the truth about opium. I cannot pretend to be hopeful that this ignorance will be dispelled before it has inflicted some ruinous injustice on the unfortunate people of India. In conclusion, I would ask those who have accepted these views about the iniquity of the Indian Government in regard to opium, to ponder the words of a wise and benevolent man—John Stuart Mill. He had better means of knowledge and knew more about India than almost any Englishman that I have heard of who had not lived long in that country, and he declared his conviction that our Government there had been 'not only one of the purest Governments in intention, but one of the most beneficent in act ever known among mankind.' This was true when it was written, and it is truer now. I believe that there is no Government in the world that strives so honestly and resolutely to think of nothing but the highest interests of the people it governs. I believe that there is no country in the world in which the men who carry on the administration are more able and upright, or have a more true regard for the welfare of those committed to their care. We who have spent our lives in India are not all fools or impostors. It is, as Mr. Batten has most truly observed, remarkable that no single instance can be quoted of an Englishman who has been directly responsible for the well-being of India, and who has had an important voice in its administration, who has held the views against which I have been protesting. That, as Mr. Batten said, has been left for irresponsible persons in this country, whose want of knowledge is patent to everyone who has studied the question on the spot. When I hear the Government of India charged with the abominable wickedness of poisoning its own subjects, and poisoning millions of Chinese for the sake of filthy lucre, there is only one reason which prevents me from being filled with indignation, and this is that I know that these charges are the offspring of ignorance alone. Unfortunately this does not make them less serious, for of all the enemies to human progress ignorance is the most formidable, and is especially formidable when, as in this present case, it is combined with honest enthusiasm and an anxious desire for that which is right."

873. (*Chairman.*) Sir John, I understand it was your wish that the paper which has just been read to us should be accepted by the Commission as your general answer in relation to the first matter named in the Order of Reference to this Commission?—Yes.

874. Then I understand that it would save you some of the great strain which you might suffer from appearing before us to-day if we could take from you in another general answer the statement of your views with regard to the remaining matters included in the reference to the Commission. Perhaps it may be convenient that I should lead up to your answer by reading over the remaining clauses in the Order of Reference. We are asked to inquire into "the nature of the existing arrangements with the native States in respect of the transit of opium through British territory, and on what terms, if any, these arrangements could be with justice terminated." We are asked "to consider the effect on the finances of India of the prohibition of the sale and export of opium, taking into consideration (a) the amount of compensation payable; (b) the cost of the necessary preventive measures; (c) the loss of revenue," and so forth. We are asked to consider "whether any change short of total prohibition should be made in the system at present followed for regulating and restricting the opium traffic, and for raising a revenue therefrom." We are asked to inquire as to "the consumption of opium by the different races, and in the different districts of India, and the effect of such consumption on the moral and physical condition of the people. The disposition of the people of India in regard to (a) the use of opium for non-medical purposes; (b) their willingness to bear in whole or in part the cost of prohibitive measures." Upon those matters you are prepared, I believe, to offer us a general state-

Sir
J. Strachey,
G.C.S.I.

15 Sept. 1893.

Sir
J. Strachey,
G.C.S.I.

15 Sept. 1893.

ment, and I think it would be more convenient that you should be allowed to make that general statement, without interruption in the form of questions, reserving our questions until you have made your statement, and we may ask or put questions upon any point which is necessary for the purpose of elucidating the subject?—Yes. Before I begin to answer these particular points, I should like to say that I feel that it is extremely difficult, in fact, impossible, really to say anything on this subject that has not been said over and over again before, and I have learned with much regret that Mr. Batten, who is absent from England, will be unable to give evidence before the Commission, for I think that his paper before the Society of Arts gives a more complete and accurate summary of all the facts connected with this question than anything I know.

875. Then we may take it from you that you support and endorse the view of the question which was presented in Mr. Batten's paper?—Entirely, without a single exception.

876. We shall take care that the paper prepared by Mr. Batten is circulated to the different members of the Commission?—The first of the questions which your Lordship has now put is "the nature of the existing arrangements with the native States in respect of the transit of opium through British territory, and on what terms, if any, these arrangements could be with justice terminated." I am afraid that I cannot say very much upon the first part of the question—for I have very little personal knowledge of those States.

877. No doubt we shall be very fully informed upon those points when we are in India?—Yes, I understand that the existing arrangement under which an export duty is levied on every chest of opium, when it leaves the native States in transit to Bombay, was substituted in 1831 for an arrangement under which the opium-producing States sold to the British Government all the opium produced in those States, but that arrangement was found to work in a very unsatisfactory way for both parties. It involved very great and objectionable interference in the internal affairs of the States and was extremely distasteful to the chiefs, consequently the present system was substituted and agreements were entered into with the chiefs by which they agreed to prevent smuggling, and that all opium intended for export to Bombay should be sent by certain specified routes. I believe that those are the only real points of great importance which are provided for. On the one hand, we have no concern whatever with the cultivation of the poppy or the manufacture of the opium or the consumption of the opium in the native States, and they, on the other hand, have nothing at all to do with the opium after it passes the scales, as they are called, where it is weighed.

878. (Mr. Pease.) Could you give us the date of the altered arrangement?—1831, I think it was.

879. I thought the first one was 1831, and that was altered subsequently?—No, I think it has been in force ever since. I believe the existing system under which the transit of the opium is managed is provided for by rules passed under the Opium Act, No. 1, of 1878. In accordance with that Act the cultivation of the poppy was prohibited throughout the Bombay Presidency, and agreements were entered into with the small native States included within the Bombay Presidency, under which they also prohibited the cultivation of the poppy, and they undertook to prevent smuggling and to adopt necessary measures for preventing the illicit importation of opium into our territories.

880. (Chairman.) Is the opium brought to its final state of preparation for consumption in the native States?—Yes.

881. The participation of the Government of India in the cultivation and preparation of opium in the native States is limited to the imposition of an export duty, is it not?—Absolutely nothing else.

882. In Bengal the Government occupies a somewhat different position?—Quite different.

883. There the Government is a producer of the article?—Yes, or a manufacturer; virtually you may almost say a producer.

884. A manufacturer?—Yes.

885. Then we will not further interrupt you. Will you kindly proceed with your statement?—The second

part of Clause 2 says, "on what terms, if any, these arrangements can be with justice terminated." Well, with regard to that question I can make no suggestion. The question, I presume, signifies:—Is it possible to make any arrangement by which the production of opium in the native States could be stopped or by which its export could be prevented. I can make no suggestion at all upon that subject, for it appears to me to be quite impracticable. These States have, as Mr. Batten says in his paper, a population of some 22,000,000. They cover an immense area; the habit of consuming opium has prevailed among the people of those States, particularly the Rajputs, for centuries. No restrictions have ever been placed upon the cultivation of the poppy or on the sale of opium within the boundaries of those States, and although it is very difficult to attempt to give any accurate statistics on such a point, the annual value of the crops of these native States has been estimated as being at least 9,000,000 of tens of rupees. I can suggest no means by which, if such a course were thought expedient, the cultivation could be suppressed. It appears to me that political difficulties of the gravest nature would be the inevitable result of any attempt of the kind. I was referring to the arrangements which were in force before 1831. I do not know much about them in detail, but it has been stated that they were in the highest degree distasteful, both to the people and to the chiefs; that they were most harassing to the people; that they involved all sorts of interference in the internal affairs of the States; and I think there can be no doubt that an attempt to suppress the cultivation altogether would lead to results of the same kind but of an infinitely more serious character. I believe, as Mr. Batten has said, that nothing short of an army of British officials scattered over the States supervising agricultural operations could prevent the cultivation. It has been sometimes said that we might prevent the export of opium into our own territories by a customs line, but that customs line would be between 2,000 and 3,000 miles long, and the establishment of such a line would be quite out of the question. We have most ample evidence in India to show the results of the existence of such a line in the Inland Customs line which was formerly in existence for the taxation of salt, and which was only abolished when Lord Lytton was Viceroy. There is no doubt that that line was one of the greatest disgraces of our Indian Administration, and it is quite impossible, I think, that anyone acquainted with the facts could ever wish to see anything of the kind restored.

886. Did they maintain a cordon round the Portuguese territory of Goa in connexion with the salt duty?—Only within the last year or so, I think.

887. Did we take over the salt manufacture at Goa?—Our treaty with Portugal has come to an end, and we have, I believe, been obliged to put a cordon, but that is on a very small scale, and we may hope temporary. The next point, my Lord, is the effect on the finance of India.

888. The effect on the finance of India of the prohibition of the sale and export of opium?—With reference to this, I think the first thing that I should like to say is that the question of the five or six crores of rupees which constitute the annual net revenue at the present time of the Government of India, is a comparatively small part of the question. I think the real essential question is—what is the value of the Indian crop? The Government revenue is, as Mr. Batten has clearly shown in his paper, a comparatively small part of the annual profits derived by India from the cultivation of the poppy. It no more represents the interests involved than in this country the 26,000,000*l.* sterling that we raise by duties on spirits and wine and beer represent the value of all the liquors consumed in the United Kingdom. I believe the so-called Drink Bill is called 140,000,000*l.* a year. In India, besides the Government revenue and the revenue derived from opium by the native States, there are the profits of perhaps a couple of million cultivators, these are the profits of the land-owners, of the merchants, the dealers, and the middlemen, and it has also to be remembered that although opium is by far the most valuable product of the poppy, it is by no means the only product. Poppy seed and poppy oil contain no opium at all, and are perfectly wholesome products, and they are very largely consumed both in India and in Europe. Mr. Batten in his paper estimates the total value of the poppy crops at about 19,150,000 tens of rupees. As far as I can

judge, their actual value exceeds rather than falls short of that amount. Poppy seed is an important article of trade. It is largely used throughout India as a condiment with food and for making oil, and for the latter purpose it is also used in Europe. The exports of poppy seed from India are valued at nearly 500,000 tens of rupees, and the value of the internal and external trade in the poppy seed is believed to be not less than 4,000,000. I cannot criticise Mr. Batten's figures, but I think it would be a matter of great interest and importance if the Government of India were thoroughly to investigate the question of the annual value of the poppy crops and were to come to some conclusion on the subject, for they have very much better means than any private individuals of arriving at the truth. Until we know something with tolerable confidence on this point it is impossible to say what would be the probable cost to India of suppressing the cultivation and the sale of opium, supposing always such a thing to be practicable and desirable. Meanwhile I can only say that my own belief is that the total value of the crops is probably greater than the amount estimated by Mr. Batten.

889. May I ask whether the 19,000,000 represents the value of the crop in the market? Is that the case; that is its market price?—The profit that is got by all classes out of the crop.

890. (*Mr. Mowbray.*) Does that include the profit in the native States as well as the Bengal opium?—Yes. Mr. Batten in his paper gives all the details by which he arrives at his conclusions. Mr. Batten also said, converting these 19,000,000 tens of rupees at the then rate of exchange the equivalent in sterling was about 13,000,000*l.*, and it would be very much the same now; but I should like to say on that point that it seems to me that these conversions of rupees into pounds sterling—the same thing applies when we come to the question of the net revenue—have very little useful meaning. Not many years ago, for instance, these 19,000,000 tens of rupees would have been equal to 19,000,000*l.* sterling. We have been uncommonly near seeing the rupee worth 1*s.*; in that case these 19,000,000 would be worth only 9½ millions sterling instead of 19; and it must be remembered that these immense fluctuations in the gold value of the rupee have not for practical purposes much affected the value of the products of the poppy crop to the cultivators of India.

891. (*Chairman.*) Of course the loss to the cultivator in India in the depreciation of the rupee might be met by an enhancement of the price of their article?—As a matter of fact, during all these great changes in the gold value of the rupee, prices in India have hardly been affected. I think it also is important to remember, as Dr. Watt has observed in his very excellent article in the Dictionary of Economic Products, that this industry has existed in India for centuries, and that from the time of Akbar to the present day it has been recognised and indeed protected by the Government. This revenue that we derive from opium we inherited from the Mogul Government.

The next point in the next clause is the amount of compensation payable, but it seems to me rather idle to talk of compensation for the suppression of such an industry as this. It is conceivable, though I have not the least idea in the world how it could be done, but still it is conceivable that a powerful Government like our own might absolutely suppress the cultivation and the trade in opium; but how compensation could be given for it I cannot conceive. My own belief is—again it is an impossible supposition—that if England were to make a free gift to India of 100,000,000*l.* sterling, it would be no compensation to India for the loss of one of the most valuable of all her natural products, for the destruction of a great industry and the extinction of one of the principal articles of her trade. The next question is, "What would be the loss of the actual revenue?"

892. Yes?—This question, it is not easy to answer with certainty, because the fluctuations in the amount of the opium revenue have been very great. Some years ago it was as much as 8,500,000 tens of rupees, but of late years it has greatly diminished. The principal cause of this, I think there can be no doubt, has been the rapid increase of cultivation in China, and the lower prices of Chinese opium. Other causes have, no doubt, contributed; probably the increased taxation in China has been one cause.

893. In the form of an import duty do you mean?—Yes. A few years ago an additional import duty

was imposed in lieu of the inland *likin* duties as they were called. Then there has been for several years a partial failure of the opium crops in India and that also has led to a great diminution in the sale of opium and in the revenue. The last year for which we have approximate figures is 1892-3. In that year the net revenue credited under the head of opium—I am speaking in tens of rupees always—was 6,371,000 to which have to be added the duties credited under excise 725,000, making a total of 7,100,000, and, this was about the average amount for the five years ending with 1892-3. For the present year 1893-4 we have only the Budget Estimate, and that, including the excise, has been reduced to 5½ millions, but to the extent of nearly 1,000,000; this large reduction is not due to an anticipated great fall in the demand for opium but to the expectation of a better crop and of increased expenditure, which will enable the reserve stock of opium which had fallen very low to be replenished. It must be borne in mind that the fluctuations in the opium revenue are, as in the present year, often due not to fluctuations in the Chinese demand or in the price obtained, but to the greater or smaller outturn of the Bengal crop, and the expense of gathering it. But the immediate prospects of the opium revenue I think are certainly not favourable. In consequence of a succession of bad seasons in India and low prices in China, and the constant increase of cultivation in that country, the quantity of opium exported has been much reduced, and other causes are, no doubt, operating in the same direction, but for present purposes I think if we take the amount estimated in the Budget of the present year of 5½ millions that is as reasonable an estimate probably as we can make for the present. But as I have said before, this sum represents only a comparatively small part of the interest of India in opium. If I am asked whether any means could be suggested, if it were considered expedient, by which the loss of 5½ millions of revenue or even a smaller sum than that—

894. That is not 5½ millions of pounds sterling?—No, I am always speaking of tens of rupees. If I am asked if I could suggest any means by which that could be made good I certainly could suggest no means. I think there is no doubt that it is useless to talk about possible reduction of expenditure. I think it certain that, speaking in general terms, there is no probability of its being diminished, but that it will go on increasing as appears to be the case in every country with an elaborate system of government. In 1881 the Government of Lord Ripon wrote very fully upon that subject, and declared that it appeared to them impossible to suggest any means by which the loss of the opium revenue could be recouped, and I think that all that they said then is quite as true at the present day.

The next clause of the Order of Reference to the Commission is: "Whether any change short of total prohibition should be made in the system at present followed for regulating and restricting the opium traffic, and for raising a revenue therefrom."

895. Would you draw a distinction in relation to the moral responsibility of the Government of India between an active participation in the trade as a manufacturer and the imposition of duties on export or charges in the form of license duties?—In answering this question I assume the object in view to be the restriction within the narrowest possible practical limits of the consumption of opium. I think it is certain that no system which could be in British territory substituted for the present system could be so effective in restricting the quantity of opium produced, and therefore in restricting the consumption. I assert very confidently that the Government of India has never been influenced by any desire to encourage the consumption of opium either in China or in India. On the contrary, its whole action has been in the direction of restricting the consumption by imposing the highest amount of taxation which can be imposed without defeating the objects in view. It appears to me that there can be no question that of all fiscal restrictions that can be imposed the State monopoly is the most repressive and severe. I think it is conceivable, though not at all probable, that the abolition of the opium monopoly in Bengal and the substitution for it of a heavy export duty such as that which we now have on the other side of India might if it were practicable involve no loss of revenue, but I think it would inevitably lead to an increase of consumption, and the difficulty of making such a change of system in Bengal would be extremely great independently of the question of the effect on the consumption.

Sir
J. Strachey,
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G.C.S.I.

15 Sept. 1893.

Bengal is intersected in all directions with rivers, the outlets to the sea are very numerous, and the facilities for smuggling are enormous. The Bengal Government some years ago gave their opinion that they could see no limit to the cost of the preventive establishment that would be necessary. I should think that no country could be found where the difficulty of preventing smuggling would be so great; and I suppose that there is no article which it is easier to smuggle. I am not quite sure of the fact, but if I remember rightly a single pound of opium will last a consumer of opium a whole year. I cannot conceive the possibility of regulating any export duty with that maximum of severity of pressure which is secured by a monopoly; therefore I think, if it be true that the interests of morality are involved, then those interests are best served by the maintenance of the monopoly. Then, as regards China in particular. If the object at which we ought to aim is the reduction of consumption by the Chinese, it appears to me clear that to whatever extent we diminish the export of opium from India, we stimulate the extension of opium cultivation in China, and the substitution of the cheaper Chinese for the dearer Indian opium, and that is a fact that has always been recognised by the Government of India. The Government of India has always seen, assuming what I think is an indisputable fact, that the Chinese will have opium, that a reduction in the supply of Indian opium instead of leading to reduced consumption in China leads inevitably to increased production and increased consumption in that country. The present monopoly system therefore, it appears to me, by which the price of Indian opium is increased to a maximum, not only checks consumption in India itself, but it checks consumption in China also. So far as India is concerned I believe, as I have said in the paper of my own which was read, that really the only question is whether our restrictive measures have not sometimes been too severe, and whether they have not to a very objectionable extent encouraged smuggling, and by making opium very dear and difficult to obtain, whether they have not encouraged the use of drugs which are infinitely more noxious. My opinion, therefore, is that so far from the present system being open to the charge of stimulating the consumption of opium, whether by Chinese or Indians, that no system could be devised by which the consumption could be so severely checked. And as a question of morals, if it be held—which I myself am very far from admitting—if it be held that the consumption of opium for other than medicinal purposes is necessarily a vice, then I think it is clear, as Sir Henry Maine said long ago, in reference to this very question of substituting an export duty for the monopoly: "For moral purposes there is no distinction between what a despotic government does itself and what it permits its subjects to do. What possible difference can it make from a moral point of view, whether they take a part of the profits from the hands of the dealer or the whole of the profits from the monopoly?" Sometimes the objection is made on economic grounds that it is very undesirable for a government to engage in the operations of private trade. I cannot say that I attach any particular importance to that. As a matter of fact, there is no civilised government that for the purposes of raising revenue has not established some monopoly or other, and for my part I see nothing more objectionable in the monopoly of opium than in the monopoly of tobacco.

896. You have exhausted what you wish to say on the fourth article in the Order of Reference?—Yes.

897. Now we come to the question of the consumption of opium by the different races in the different districts of India, and the effect of such consumption on the moral and physical condition of the people?—The only country—I cannot say of India, because it is not India, it is as unlike India as Algeria is unlike France—but the only country under Indian administration in regard to which it appears to me that any evidence has been produced that deserves serious consideration to show that any considerable section of the people has suffered from the consumption of opium, is Burmah. Now it is indisputable that there has been a great body of opinion as to the injurious effect of opium on the Burmese. Two Chief Commissioners, Sir Charles Aitchison and Sir Alexander Mackenzie, both of them men who are entitled to speak on the subject with the highest authority, have concurred in that opinion, and there is no doubt that the same opinion has been very generally held by the majority of the British officers employed in Burmah. Also

it seems to have been an admitted fact that those views are in accordance with those of the more intelligent classes of the Burmese themselves. "Native opinion," Sir Charles Aitchison wrote, "is unanimous in favour of stopping the supply of opium altogether, and no measure we could adopt would be so popular with all the respectable and law-abiding class of the population. In a matter so intimately affecting the well-being of the community," he added, "these expressions of opinion are entitled to the greatest respect. When practical questions of this kind arise it may become a duty to yield to strong and general desire of the people, even when their opinions may appear unreasonable." Now, although I have myself, I must say, failed to discover the facts upon which this belief in the injurious effects of opium on the Burmese population rests, I cannot deny that it was right to yield to this general consensus of opinion on the part both of the Burmese themselves and of the English officers most competent to form an accurate judgment, and to take measures for preventing the sale of opium to Burmese, and their possession of the drug, and this has been actually done throughout the whole of Burmah. In regard to this question of the consumption of opium by the Burmese, it is, as Mr. Batten says, remarkable that the authorities in Burmah seem to have arrived at the conclusion that opium is a benefit to everyone in the country except the Burmese themselves. I should like to add that while there has been this unanimity of opinion in regard to the mischievous results of opium on the Burmese, there has been an equal unanimity in regard to the harmlessness of the practice among the large foreign population, Chinese and Indian, of Burmah. Sir Charles Aitchison writes: "There are large numbers of the non-Burmese community, constituting perhaps the most thriving and industrious section of the population, to whom the drug is a necessary of life, and by whom it is rarely abused. It is impossible to say precisely what the numbers of the Chinese and natives of India are, but they are probably not less than 200,000. The legitimate requirements of these people must necessarily be considered and provided for." Sir Alexander Mackenzie's views on that point were the same. He objected to any interference with the supply of opium to the non-Burmese population. "There is," he said, "a considerable non-Burmese population of Shans, Chinese, and others, who are accustomed to the moderate use of opium, and who consume it without ill effects or even with beneficial results." The Chief Commissioner "is not prepared to advise the absolute prohibition of the possession or sale of opium in Burmah by persons of non-Burman descent. Such a step would be an unjustifiable interference with the habits of a large section of the population, and would be quite impossible to enforce. It may be considered as established beyond question that there is a legitimate demand for opium among the foreign residents of Burmah, which would exist whether the Government countenanced the use of opium or not, that if Government decided to declare the sale or possession of opium generally illegal the demand would be supplied by illicit means, and that the result of any attempt to enforce absolute prohibition of the use of opium would be the loss of a large amount of revenue without any commensurate benefit." Although, as I said before, I cannot say that I am satisfied that while opium is harmless or beneficial to Chinese and others it is poisonous to the Burmese, still I cannot dispute the authority by which that opinion is supported, and if it be correct, I know of only one suggestion by which it can be explained. I believe there is no race of men among whom the demand for one form of stimulant or another does not exist, and it has been held by some—perhaps correctly—that while particular stimulants are harmless or beneficial to some races, they are injurious to others. It is possible that opium taken even in moderation may be injurious or a dangerous temptation to Burmese, although it may be innocent or beneficial to Chinamen or Sikhs, and, as many have maintained is the case, alcohol taken even in moderation may be bad for the people of Southern Asia, whilst, similarly taken, it may be good for Europeans. However this may be, Burmah is not India, and it is not reasonable to apply to India conclusions based upon observations made in a totally different country. It appears to me that as regards India, properly so-called, there is no evidence whatever to show that in any part of the country the consumption of opium is anywhere a common and crying evil. Of course I admit

that the use of opium may be abused, but I entirely disbelieve that this occurs to any general or dangerous extent. On that point, as I have said in the paper that was read to the Commission, I think that throughout this controversy it cannot be too constantly remembered that India is not a single country such as we have in Europe, but a great continent, the countries and the peoples of which, beyond all doubt, differ from one another far more than the countries of Europe differ. As I have said elsewhere there is more difference—a great deal—between a Bengalee and a Sikh than between a Scotchman and a Spaniard. I believe that a very large proportion of the prevalent errors about India arise from false generalisations. Sensational descriptions of opium dens in Rangoon or Bombay will not in any way help us to learn the truth about the consumption of opium by Rajputs and Sikhs. Out of the 290,000,000 of people in India, I do not suppose that there are 290 hundreds who have more personal knowledge of these opium dens so-called than people have in England. I do not think that I can usefully say more in detail about the consumption of opium in the various countries of India. In the paper which has been read to the Commission I have stated my own conclusions. An excellent summary of the facts is given in Mr. Batten's paper, and with it are the speeches and papers of some of the most experienced Indian authorities—

898. Who took part in the discussion on Mr. Batten's paper?—Yes. Through the greater part of India it is doubtless true in every province that there are eaters or smokers of opium, chiefly eaters, but, in my opinion, there is really in the greater part of India nothing that deserves to be called an opium question. Certain classes, especially in Central and Northern India, have undoubtedly consumed opium for centuries. They constitute a very small proportion of the 290,000,000 of people in India, but, no doubt, their positive numbers are large. I do not know what they may be, but of Sikhs and Rajputs and others who consume opium the absolute number is large.

899. And they belong to races which have been exceptionally loyal to the British authority?—Certainly. Among the Rajputs and Sikhs in particular the use of opium has always been common, and the Sikhs in particular, who form so immensely important a part of our army, are almost invariably habitual consumers of opium, and, with very rare exceptions, they consume it with just as much moderation as the gentlemen in this room consume their wine and their beer. They regard it almost as a necessary of life, and it is a notorious fact that these Sikhs—and I may say the same of the Rajputs—are physically, I believe I might also say morally, but at any rate physically they are the very finest races in all India. As I have said in the paper that was read, a crack regiment of Sikhs need not fear comparison with any soldiers in the world; certainly they need not fear comparison with a regiment of our own Guards. If opium is so universally destructive, how are such facts as that to be explained? I believe that there is no possible explanation except that although the use of opium may be abused, used in moderation it is not harmful, and I have no doubt that it is much less likely to be abused than the use of alcohol. I do not think, my Lord, on that point I have anything more to say.

900. The last subject in the Order of Reference is the "inquiry into the disposition of the people of India in regard to the use of opium for non-medical purposes, and their willingness to bear, in whole or in part, the cost of prohibitive measures"?—On that point, my Lord, I would ask you to allow me to read a passage from a despatch written by Lord Ripon's Government in India in the year 1881, which gives, I think, a complete answer to the question:—

"It cannot be doubted," they said, "that native opinion in India would strongly resent any additional burdens being placed upon the taxpayer with a view to the abandonment, either whole or partial, of the opium revenue. It is, moreover, more than probable that the views of the British Government on this subject would be misunderstood. 'There must,' a native paper said a short time ago, 'be some selfish motive at the bottom of the movement made in England for the suppression of the opium trade.' No doubt an opinion of this sort is very foolish. The high motives which guide the action of the Society for the Suppression of the Opium Trade cannot for a moment be doubted. However much we may consider that the views they express do not take sufficient account, whether from the Chinese or

Indian point of view, of the practical difficulties connected with the problem they have set themselves to solve, no reasonable person can fail to respect their motives. Without doubt the gentlemen who take an active part in the agitation against the opium trade in England would be the first to protest if they thought the Indian ryots were suffering from any grievous injustice. But, on the other hand, it cannot be doubted that the opinions foreshadowed in the native print, from which we have quoted above, are prevalent in India; that they would find louder and more frequent expression if it became generally understood that there was any serious intention of moving in the direction proposed by the Anti-Opium Society; that even supposing England were to award a considerable compensation to India, it is exceedingly improbable that such compensation would adequately meet the loss involved in the abandonment of the opium revenue, and that in consequence a sense of injustice would be engendered amongst the natives of this country, who would consider either that their interests had been sacrificed from selfish motives, or, at all events, that in our regard for the Chinese we had done an injustice to our own subjects."

I feel confident that the opinions which the Government of India thus expressed are entirely accurate. The only criticism upon them that I think possible is that they have stated the facts with too great moderation. Measures such as those suggested would, I believe, be looked upon from one end of India to the other with amazement and indignation, and if they were really enforced they would lead us into political dangers of extreme gravity. I do not think, my Lord, I can add to that.

901. You have made a very clear and comprehensive statement of your views; I should be very sorry to add to the task which we have already imposed upon you to-day by asking you any unnecessary questions. There are one or two points which I would like to ask you about. You have spoken in the early part of your evidence very confidently with reference to the effects of the consumption of opium, I believe, in India. You have said that so far as your knowledge extended you did not think it could be established that the consumption of opium had been generally injurious to those races in India who make use of opium?—Yes.

902. You expressed an equally strong opinion with reference to the people of China?—Yes.

903. Your observations with reference to the people of India would rest upon a large personal experience in India, would they not?—Certainly. Yes.

904. With regard to China, I suppose what you have told us results from the reports which have come before you from persons that you consider are entitled to speak with authority with reference to China?—Yes, I have no personal knowledge whatever of China.

905. We have been told by the numerous witnesses representing the missionary body in China that the Chinese Government are understood by them and by the people of China to be anxious to prohibit the growth and the consumption of opium as supplied from the local growers in China, and we have been told that the Chinese Government have been precluded from taking any effective steps, and would continue to be deterred from taking any effective steps, so long as opium is permitted to be exported from India. What would you say with reference to that statement?—I think that is a point upon which other witnesses—Sir Thomas Wade for instance, whose name I see down here—can give far more valuable evidence than I can. All that I can say upon the point is that I am under the strongest impression that it is a complete mistake to suppose anything of the kind, and that the Chinese Government has no wish whatever to prohibit the importation of opium into China. I believe that if the Chinese Government desired to diminish the consumption of opium, of which I have seen no sign, it is quite intelligent enough to see that the diminution of the import of opium from India could not have that effect. Apart from that my belief is that there is no part of the revenue of the Chinese Government which that Government prizes more highly than the revenue that it derives from opium. This is paid in hard cash into the Customs' department at the treaty ports, and it goes into the Imperial Treasury. I have not got the papers here, but I believe that it has been made perfectly clear that the Chinese Government not only have not shown any desire to stop the importation of opium, but that they would be very sorry to see it stopped, because they

Sir
J. Strachey,
G.C.S.I.

15 Sept. 1893.

Sir
J. Strachey,
G.C.S.I.
15 Sept. 1893.

would lose—I forget how much they get, but I believe not less than a couple of millions sterling a year from it.

906. Now turning to India, I think you have told us that the larger portion of the production of opium in India is raised in the native States?—Probably the largest production, because there is not only the export from Bombay but the large consumption by the people themselves. As far as the export to China goes, the larger quantity goes from Bengal.

907. You have given us, have you not, a strong opinion that to interfere by prohibition in the native States would involve grave political difficulties?—I think very great.

908. And you entertain a similar view with reference to the prohibition of the use of opium by the races which have made use of opium from time immemorial, and which represent a very important element in our native army?—I cannot conceive the possibility of doing such a thing without the gravest political danger.

909. Looking at this question from a revenue point of view, you have expressed your conviction that there would be great practical objections to the prohibition of opium; that we derive a certain revenue from that source, and that you do not see from what other source this could be compensated if this revenue were brought to an end?—Yes.

910. But is it not the case that the revenue of India has shown a decided tendency to growth in recent years?—Certainly.

911. And from all sources?—I may almost say that there is no branch of the revenue which has not increased in a very satisfactory way.

912. There has been a great improvement in the revenue from railways, has there not?—Yes.

913. And you anticipate a further constant growth from that source, I presume?—Certainly. Every branch has improved. If it had not been for the terrible exchange difficulty I should say the revenues of India were in a very prosperous condition; but that, of course, has been a difficulty.

914. If the expenditure had not grown in an almost equal ratio with the growth in the revenue, the Government of India would have been in the enjoyment of a very handsome surplus by this time, would they not?—Certainly.

915. Under the various heads of charge, no doubt there are some heads of expenditure which inevitably arise in connexion with the efforts which we are making to introduce civilisation, and to improve the material and moral condition of the people of India; that is so, is it not?—Certainly.

916. For instance, public works, the supply of water, and many other heads of expenditure of that nature, are there not?—Certainly.

917. The military expenditure has shown a tendency to very rapid growth in recent years, has it not?—Yes, very great.

918. That subject, I daresay you are aware, has excited particular attention on the part of the Indian Currency Committee?—Yes.

919. You are speaking of this subject, of course, only as a civilian, but perhaps you may be in a position to say whether you think that that head of expenditure may be possibly arrested or checked in future years?—The military expenditure?

920. The military expenditure?—I am not able to say whether all the additional military expenditure has been wisely incurred or not, but there is no doubt, I think, speaking in general terms, that it is impossible to suppose that our military expenditure will be diminished. The circumstances which have led to the increase of military expenditure in India are patent to the world. They all may be summed up in the fact of the advance of Russia. It is foolish to prophesy what is going to happen in the future, but I believe for my part—that this is as certain as anything that we can foresee in regard to India—that some day we shall have to fight Russia on our frontier, and if we are not prepared we know what the consequences will be. Although I cannot enter into details and say that this or that branch of the expenditure was necessary, I have not the slightest doubt that there has been no such urgent necessity in India as the increase of our military strength. And we have this to remember also with regard to the advance of Russia towards the Indian

frontiers; we have not only to think of the possibility of having to fight her. The fact of the advance of Russia is felt throughout the whole administration of India. It is impossible to forget that all the native States of India know perfectly well that there is this great European power now approaching, and that we may have to fight for our empire.

921. Assuming that the change which we must have in contemplation is one for which we ought to stand prepared, might it not be possible that the preparation would be made quite as effectually by a general reinforcement of our Imperial army and our Imperial navy as by a local and perhaps excessively burdensome military expenditure in India itself?—With regard to that question, England now gives no help whatever. Every single farthing that is expended on the British troops that come from this country is paid for by India, and will continue to be so, I suppose. I do not think myself that it is fair that it should be, but so it is.

922. It is possible that in the future some readjustment of the burdens of military expenditure, and the preparation for the contingencies that you speak of might be made which would to some extent relieve the Indian Exchequer?—I should be very happy if I could believe that there was any probability of such a thing happening.

923. Then with reference to the question of the revenue derived from opium generally, looking at it from a financial point of view. I assume that you consider that there is a distinct objection to placing undue reliance upon such a source of revenue because of its uncertainty. It depends upon the fluctuations of crops and depends also upon the policy which may be followed by the Chinese Government, who might or might not at some future date adopt a fiscal policy which would operate to the exclusion of the Indian product from the Chinese markets?—Yes.

924. You would be glad, would you not, that the Indian Government should be in the position in which it would cease to be dependent upon this opium revenue for establishing a balance between revenue and expenditure?—Certainly, but not at all on moral grounds.

925. On financial grounds you are speaking?—Certainly.

926. (Mr. Pease.) You mentioned the native States generally. Malwa has also been mentioned—would you give us the names of the native States?—I am afraid that I cannot enumerate them all. The most important ones would be Indore, Gwalior, and some of the Rajputana States, Udaipur, and a number of smaller States.

927. Most of the evidence which we have had given in to us has been with regard to both eating and smoking. I see in your remarks with regard to the Sikh soldiers, you allude to their being opium-drinking regiments?—I think that I ought not to have said drinking. Sir James Lyall could give much better information about that. I believe that the Sikhs generally prefer the decoction called *post*, but I suppose when a Sikh soldier goes upon a campaign he takes a little bit of opium.

928. (Sir James Lyall.) Yes, they do have that.

929. (Mr. Pease.) Do you know what proportions of the men are consumers of opium?—I could not say from personal knowledge, but my belief is the great majority.

930. What is your impression as to the proportion among the Rajputs of those who consume opium?—That I could not give you except as a guess.

931. Surgeon Sir William Moore estimates the proportion after his first inquiry at 6·3 per cent., and after his second inquiry at 11·29 per cent. You have no reason to doubt that that is a pretty fair statement that perhaps from 6 to 11 per cent. would be the proportion of those who take opium?—He has studied the question on the spot, and I should think that his evidence is as good as you are likely to get.

932. And how would those soldiers compare with other sections of the community or to the proportion that were likely to be consumers of opium?—I could give no information upon that point. I have no knowledge of it.

933. You estimated the revenue at Rs. 5,750,000 I see in the Budget Estimate for 1893-4. The value of the net revenue of the current year is put at Rs. 5,061,200, that is something like three-quarters of a million less?—Yes; but that does not include the excise revenue

The arrangement is this, Rx. 5,000,000 is credited in the public accounts under the head of opium; then in addition to that there is the excise opium, the duties which are levied on opium consumed in India. I think I have got the figure; it was Rx. 729,000, which has to be added.

934. Which explains the difference; it seemed a discrepancy?—It makes the grand total Rx. 5,790,000.

935. Which is paid by the Indian taxpayer?—Yes, that is, the Rx. 729,000.

936. Then you stated that the loss to India, as I understood it, was something like Rx. 19,000,000; that would be something like 13,000,000*l.* sterling, and it would not merely be a loss of revenue?—Yes.

937. In estimating that Rx. 19,000,000 you estimated the whole value of the land and the value of the labour, and the services of the merchants and so forth?—Yes. Those figures, as I said, I derived from Mr. Batten, and in his paper he has given all the details by which he arrives at that particular figure.

938. None of that arises at all if the land can be equally profitably employed, if the merchants could turn their capital to some other business, and the labour was equally profitably employed?—With reference to that Mr. Batten makes a remark which I think is very much to the point. He says, suppose you wanted to abolish the consumption of beer in England and were to tell the hop growers of Kent that they might substitute for their hops potatoes and gooseberries, they would not think much of it; and so I think you may say of the opium in India.

939. But it is a matter of fact that the land under opium cultivation has been restricted and reduced without any compensation being paid to the persons whose lands have been growing poppy before?—Certainly it varies very much and has been diminishing.

940. And is it not also true that a great proportion of the cultivators now would not continue the growth of the poppy if it were not for the advances that are made to them for the purpose?—I am not prepared to say. I suppose if the advances were not given, it is extremely probable that the cultivation would be restricted.

941. They would then be placed in the same position as ordinary cultivators?—But to what extent that would happen I really could not say.

942. You think that the cultivators would be considerably prejudiced if they had to cultivate their lands with other crops?—They evidently think so, because it is perfectly voluntary the cultivation of opium; nobody has any pressure put upon him to cultivate opium.

943. You spoke of the policy of the Indian Government having been to restrict the cultivation of opium. Do you recommend a policy of restriction?—No. I do not think I said that it had been a policy of restricting the cultivation.

944. "Which was severely checking"; that was the expression, I think?—I said I thought that the monopoly system was more restrictive than any other system that could be substituted for it.

945. Then do you see any object in restricting the growth?—Well, my own personal opinion is that the consumption of opium is, in the vast majority of cases, perfectly innocent, just as I think in this country that the consumption of beer and wine is. Nevertheless, I do not deny in this country that I think it perfectly right to levy high duties on wine and on beer, to say nothing of stronger drinks. I think it is perfectly right to raise as large a revenue as you can from articles of that kind, and so I would say with the opium in India. Although I believe that it is not mischievous, still I think it is quite right to levy a heavy duty upon it; and also I cannot leave out of consideration the fact that there is a very strong opinion of multitudes of people whose opinions deserve respect, who do not think as I do; and I accept the fact that practically it would be impossible for any Government to encourage the growth of opium to any great extent. It is out of the question.

946. For moral or financial reasons?—No, I mean----

947. Out of respect to public opinion?—As I read in an extract from a paper of Sir Charles Aitchison with regard to Burmah, when you have public opinion very strongly to this effect, even if you think it wrong you have got to pay attention to it.

948. You state, I see in this paper, that "the vast majority of smokers of opium in China consume it in moderation, and it is, as I said before, as harmless as the wine and beer of Europe." Can you tell us upon what you formed that statement, from what information?—All I can say is, that although I have had no personal experience in China, this is the conclusion that I have arrived at from all that I have been able to learn upon the subject.

949. If the facts were different, and that it was a cause of demoralisation in China, would you think that the policy of the Government ought to be any different to what it is?—Certainly, but only if the facts were different.

950. That if there was demoralisation in China, the course of the Indian Government should be different from what it is?—As I have stated in my evidence, my belief is that by diminishing the export of opium from India you do not diminish the consumption in China; as a question of morals, I do not say that it is right to desire to get a profit from the vices of other people. However, I may say upon that point it is certainly no worse than to get it from the vices of your own country.

951. But you think that the Indian Government should be no party to the exportation of opium to China if it was demoralising to the Chinese?—No, I would not say that. If I am quite certain that the Chinese will have the opium, and that by sending Indian opium to China the vice in China is not increased, I would not say that it was wrong.

952. We might as well have the profit of demoralising them as anybody else?—No; I will not admit that that is the proper way of putting it.

953. You stated that there were practical difficulties with regard to the prohibition of the growth of the poppy; is it not so, that it is effectually prohibited in Madras and Bombay at the present time?—I spoke of the means of prohibiting it in the native States. Yes.

954. But is it not the fact that the manufacture in the native States is at present entirely in the hands of English officials?—Certainly not; they have nothing whatever to do with it.

955. Under the supervision of English officials?—Certainly not.

956. I thought that was the case?—No; they have nothing to do with it whatever.

957. When does it first come to the attention of the English officials after it is manufactured?—When it leaves the native States this export duty is levied upon it; but we have nothing else to do with it.

958. It is not true, as we have been told, that during the manufacture it is under the supervision of English officials?—Certainly not.

959. (*Mr. Mowbray.*) I think you told us that the growth of the poppy had been prohibited in the Bombay Presidency under the Act of 1878?—I believe it was 1878.

960. And that that applied also to the native States under the Bombay Government?—Yes. I think, if I remember rightly, with the exception of Baroda.

961. It is not, I believe, technically under the Government of Bombay, is it?—No; but there is some special arrangement, I believe, made with it.

962. I only wanted to know whether before that prohibition there had been any cultivation of the poppy in the native States under Bombay?—I could not answer that question. I have no knowledge of it.

963. Now, I should just like to understand clearly where this transit duty on the Malwa opium is levied. Is it levied at certain definite points on the frontier between the native States and the Bombay Presidency?—There are certain points. I could not name them all, but Indore is one—perhaps the most important—Indore, Rutlam, and Ahmedabad. There are certain points on the frontier where arrangements are made for weighing the opium that is brought across. There it is weighed and sealed up in chests in some particular fashion, and sent with a passport. I believe it is sent in special consignments under guards; it is sent through to the Custom House at Bombay for export, and the duty, which is now at the present moment 600 rupees a chest, is levied at the place where it is weighed.

Sir
J. Strachey,
G.C.S.I.
15 Sept. 1893.

Sir
J. Strachey,
G.C.S.I.
15 Sept. 1893.

964. And is it all exported from Bombay, or is it consumed—part of it consumed—some of it consumed in the Bombay Presidency?—Yes, by far the greater part of it is exported to China, but such part—I do not remember at this moment what proportion, but comparatively small it would be—whatever is required for the local consumption of the Bombay Presidency would be sold there.

965. And is this opium sent through the frontier principally by native governments?—No; by native merchants.

966. But, I mean, they act upon their own responsibility, and not as agents for native governments?—No.

967. But these arrangements are all made with the native governments, I suppose, that the opium should pass through these special frontier stations, if I may call them so?—As I have stated, I have little personal knowledge of these matters; but, as far as I understand, the native governments have engaged that all the opium shall go by particular routes, so that there may not be smuggling through either. No doubt there is a great deal of smuggling as it is.

968. You think there is?—Well, it may readily be supposed that with such a valuable article as opium there will be smuggling; but as to what the probable amount of the smuggling is I could not say.

969. But I suppose if we had not these arrangements it would be almost impossible to prevent smuggling?—Certainly.

970. Where does the opium come from which the Sikhs consume?—That is grown in the Punjab.

971. In the Punjab?—For the most part, at any rate.

972. Is that in the native States in the Punjab?—No; Sir James Lyall would know that better than I do; it is grown under license, I believe.

973. (Sir James Lyall.) It is partly grown under license, and on payment of a duty on area, and on condition that the produce can only be sold to the retail vendors, who pay a sum to Government for the privilege of retail vending.

974. (Chairman.) A license duty?

975. (Sir James Lyall.) Yes; and it is partly grown in the Hill States subject to the Punjab Government, just as the Malwa opium is grown in the Malwa native States, and it comes out also under the same conditions, that it can only be sold to the Government contractor; and a small amount is allowed to come in from Central India and Rajputana on payment of the same pass duty, or very nearly the same, or quite the same, as that which the same opium pays on export to China; and in certain places like Delhi, where there has been a class of people who in former times were accustomed to use the Bengal or Patna opium, a certain small amount of what they call excise opium is allowed to come in and it is taken and put into the Government Treasury and sold to these licensed vendors—a very small amount; it is only from one or two places like Delhi that has been allowed.

976. (Mr. Mowbray.) Then, in fact, they have in India three systems; really, they have the Government monopoly in Bengal, they have the native-grown opium, paying the transit duty, and they have the Punjab system of growing under license. I suppose that you would not be prepared to recommend the license system in lieu of the monopoly system in Bengal?—No; I do not see that there would be any advantage gained by it. As I said in my evidence, if the object is to put as heavy a tax on the opium as possible, I think that is gained more completely under the monopoly system than any other.

977. Have we any arrangements with the native States which regulate the amount of transit duty which we charge?—No; that is entirely in our own hands; we can fix any other export duty.

978. And it is fixed, I suppose, mainly with the view to revenue?—Entirely.

979. (Mr. Wilson.) You mentioned in your paper, Sir John—the paper which was read to us about the growth of opium in China—provinces being given up to it. I understand that is not from your own knowledge?—No.

980. Can you tell me where I could find the best information on that subject?—I am afraid I cannot answer that question. I think some of the other witnesses will give you better information than I can.

981. Then you made a remark which I did not quite catch—what the bearing of it was. It was something to the effect that out of 290,000,000 of persons in India there were not more than a certain proportion who knew anything about it, or not more that knew about it, in India than in England. I do not know whether you remember the expression?

982. (Chairman.) Yes, it was with reference to the personal knowledge of the evils of the opium dens?—I think what I said was—though I do not think my figures have any value—what I said was, I think, this: that out of the 290,000,000 of people in India I did not suppose there were 290 hundreds, that would be 29,000, who had any personal knowledge of opium dens.

983. (Mr. Wilson.) That is what I did not understand?—But I did not mean to say that that number has any importance.

984. (Chairman.) It is merely a mode of conveying a general impression?—Yes.

985. (Mr. Wilson.) Then I only want to ask you about these Sikhs, to whom you referred, and their consumption. You said something about when they went on campaign they took a bit. Do I understand they do not regularly take it?—They regularly take it, certainly; and I have been told by men who have the most intimate knowledge of Sikh soldiers that you could not, in fact, take them on a campaign without it—that it is absolutely necessary to them.

986. They eat that?—Yes.

987. Do they smoke as well?—I do not think so. No.

988. Have you any idea approximately about how much they consume daily?—I do not know; I could not say; it is a very small quantity.

989. (Chairman.) You have in another part of your evidence said that a pound would represent the consumption of a whole year?—Yes, but I do not stick to that. I spoke in general terms; I do not stick to the particular weight.

990. (Mr. Wilson.) With reference to Mr. Mowbray's question about smuggling, I do not quite understand. Is there something like a Customs line now round these native States?—No, there is no Customs line; but an arrangement is made by which the native States engage that the opium intended for export to Bombay should go by particular routes and shall cross their frontiers at particular points.

991. Yes; but what is the use of an arrangement if there is no Customs line to enforce it?—The native States bind themselves to take care that it is enforced. I do not doubt that there is a great deal of smuggling; but still when it comes to exports of thousands of chests, you cannot smuggle that.

992. (Mr. Pease.) I understand, Sir John, that none of the smuggled opium is exported—that the opium that is smuggled will not come into such circumstances as it can be exported?—No; it could not, certainly, on a great scale.

993. No; it would be consumed in India?—Yes.

994. (Mr. Wilson.) I understand that a great part of the opium is grown on advances?—Yes; in Bengal only.

995. Bengal?—Yes.

996. Advances?—But that is the universal custom in India—to give advances to cultivators of opium and everything else.

997. Does Government—do the authorities provide advances in the same way for any other crop or industry?—No.

998. The other advances to which you refer are made by merchants and so forth?—The Government advances are certainly for nothing else.

999. (Chairman.) It is the only article in which they are engaged as manufacturers. Is there anything that you would like to add?—No; I do not think there is anything else.

The witness withdrew.

Surgeon-General Sir WILLIAM MOORE, K.C.I.E., Q.H.P., called and examined.

1000. (*Chairman.*) Sir William Moore, will you describe to us the nature of your duties, and the official position which you filled in India?—I have filled many official positions; but perhaps the most important were as principal medical officer, for a number of years, in Rajpootana, and then as Deputy Surgeon-General for five years of the Bombay Presidency, and then as Surgeon-General to the Bombay Presidency.

1001. How many years altogether did you pass in India?—About 33½.

1002. In the course of your service were you led to give much attention to the use of opium?—I first commenced investigating the use of opium so far back as the year 1868, and the results of my investigations were published in one of the selections from the Government of India in the Foreign Department—I forget the number—and I then said that opium using was not so prevalent in Rajpootana as had been supposed (that, I think, was mentioned just now); and afterwards in some other article I said that nearly all the Rajpoots used opium. The anti-opium party took that up as a contradiction; but they were not aware that about only one-fourth of the population of Rajpootana are Rajpoots, the other are Mhairs, Menas, Gonds, Bheels, and various other tribes, so that they made a mistake. It is amongst the Rajpoot population that the use of opium is prevalent. I do not mean to say that all of them use it, but the great majority of them do, and especially the native gentlemen—the Thakoors or Barons of the country.

1003. We have been giving our attention to the opium question from a general point of view. Can you tell us how were the investigations which you made with reference to the use of opium conducted?—Well, in Rajpootana they were conducted—(I was then the Superintendent-General of Dispensaries and Vaccination, and therefore had to travel all over the country)—they were conducted by noticing the people at the different hospitals and dispensaries, by associating with them in their villages, by friendships with the Thakoors and native gentlemen, sometimes staying in their houses; in Bombay by going to the opium shops, by seeing the people there; by sitting down and smoking opium with them; and in the same way at Poonah.

1004. Well, towards what particular point were your inquiries directed?—Oh, purely and entirely to the physiological effect of opium on the constitution—the habitual use of opium on the constitution.

1005. Well, what were the conclusions that you arrived at?—Well, I came to the conclusion that opium smoking was practically harmless, and that drinking umal pawnee, or opium water, was practically harmless, not only harmless, but in many cases productive of very great benefit. A moderate use would brighten the intellect and strengthen the system, render the people more able to go through fatigue, and in seasons of want and scarcity enable them to do with less food. It was also in some degree a prophylactic to the malarious fevers which abounded in some parts of the country, and which I could prove by actual demonstration.

1006. Did you draw any conclusions with reference to the comparative evil effects of opium and alcohol?—I have already mentioned that the evil effects of smoking opium in moderation are practically *nil*, and the evil effects of drinking umal pawnee or opium-water are practically *nil*, but if opium is taken to excess it does an injury, but it does not do so much injury as alcohol. It never produces any disease, excepting in the very last stages of an opium-eater, who may suffer from emaciation and diarrhoea. But that is quite exceptional. It never produces drunkenness, such as alcohol does, in fact the attitude of the opium user is always one of repose. He never quarrels with his neighbour or beats his wife, or makes arrangements to commit crimes, whereas the man with alcohol does all this; and the man who suffers from alcohol will get disease of the heart, fatty degeneration, disease of the liver, the kidneys, and other organs. Nothing of that occurs from opium, excepting, as I have said before, by a very large use of opium—the last stages are some degree of emaciation and diarrhoea.

1007. Now, supposing opium were only obtainable in India as a medical prescription, what would you conceive to be the probable result of such a restriction?—It would be a grievous interference with the social

habits and customs of large sections of the population, I will give you an instance. The Rajput, when he is going to make a journey of 10 or 15 miles, or even 20, or even 30 miles, through the sand on a camel, generally takes a cup of umal pawnee—a stirrup-cup to strengthen him on the road. He would not be able to do that. The Rajput gentleman, after he has had his dinner at night, produces the opium pipe or cup of umal pawnee, whichever he prefers; it is produced just as wine is produced in this country after dinner. He would not be able to do that. The camel-feeder, who goes out into the deserts to feed the young camels, and stays there for months, would not be able to do it on his handful of grain and his camel's milk if he had not opium to add to sustenance. The people who frequent the opium shops—and most of them come to the opium shops because they are suffering from some physical malady—would not be able to go to these opium shops, and would not be able to get the relief that they get from them. The malarious fevers of the country would be considerably increased in severity, and the native chiefs, in whose territories opium is grown, would have grave cause for dissatisfaction.

1008. (*Sir W. Roberts.*) Have you, in your travels over India, distinguished between the effect of the habitual use of opium in different races?—No, I have not.

1009. You spoke of the Rajputs?—I spoke of the Rajputs. That is the finest race in India.

1010. They are opium eaters?—They are almost habitual opium eaters.

1011. Then you can speak from your own knowledge that they are generally habitual opium eaters?—Well, I have associated with them in daily intercourse, and at times lived in gentlemen's houses. My tent has often been pitched close to their houses; the Thakoors have come into my tent at night.

1012. You are speaking of the reputable citizens?—I am speaking of the gentlemen, the Thakoors, who are really the barons of the country.

1013. And also the workmen?—Oh, yes.

1014. Well-regulated and well-conditioned workmen?—Yes; many such workmen.

1015. And is it your experience that those using opium in that way habitually were, as a class, healthy people?—As healthy as they could possibly be as a class.

1016. I presume there are no statistics in regard to the death-rate or birth-rate in Rajputana?—No, there are no reliable statistics. There are statistics, but I would not recommend them as reliable.

1017. Have you observed whether there was a tendency in case of an habitual opium eater to the increase of the dose?—As a general rule they do not increase the dose, but some do.

1018. That has been your personal observation?—That has been my personal knowledge—yes.

1019. How many times a day do they take their opium?—Generally at night. Then you must recollect that the Indian labourer who takes his opium has no means of solacing himself after the day's work; he has no theatres, no music halls, no clubs, no societies, no gin shops.

1020. And so far as you know, speaking broadly, there is no evidence that the habitual use of opium in moderation, as you describe it, shortens life?—In moderation I should say there was no evidence whatever. Here is a book which gives you the history of the lives of Bombay opium smokers. I do not know whether you have it. But of course I do not mean to say that the excessive use of opium is not deleterious, because it is. But these cases of excessive use of opium in my experience are quite exceptional.

1021. Then, speaking of Rajputana, at any rate, the excessive use of opium is very much like drunkenness amongst ourselves—an exceptional condition?—Just so.

1022. Taking the total effect of the opium habit, is it your view that it is more beneficial than harmful, or more harmful than beneficial?—It is much more beneficial than alcohol.

1023. That is your conviction?—That is my honest view, after many years' experience and investigation.

Sur.-Gen.
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15 Sept. 1893.

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15 Sept. 1893.

1024. Has your experience been gathered almost exclusively among the Rajputs?—No. I have already stated that I was in Bombay for some time, where I often went to the opium shops and smoked opium in the shops with the people.

1025. Is there a community among whom there is a general use of opium in Bombay?—It is very generally used, and by many people who you would never suppose used it—clerks and omnibus conductors, buggy drivers, tramcar men. A great many of them use it.

1026. Is it used in Bombay amongst the more reputable, the law-abiding citizens?—Not to so great an extent as in Rajputana, because the most of them in Bombay have taken to champagne if they can get it, or liquor if they cannot.

1027-8. There is no generalised consumption?—Not in Bombay; no.

1029. You cannot speak of the consumption of opium in Bombay as we can of the use of wine or beer in this country?—No; I do not think you could, because it is not quite so prevalent.

1030. So that if you were to stop the consumption of opium by any means in Bombay the effect would be very different from stopping it in Rajputana?—Yes, it would; but you would do a great injury to all these poor people who go to the opium dens, as you call them, though they are not more dens than the liquor shop is next door or two or three doors off; you do a great injury to them. One-half of the people who come habitually to these opium shops go there because they are suffering from some painful malady.

1031. And is that the best course that you think they could adopt to get relief?—I think it is, because they have, probably all of them, been to the hospitals and not got relief.

1032. Would one be at all right in comparing these persons, who frequent the opium dens in Bombay, to the classes that have sometimes been called the residuum, or the submerged tenth of society?—A great many of them are of course the lower classes of society. The higher classes smoke their opium at home, or drink their opium at home; they do not go to the shops. It is just in this way. Take a gin-shop in the lower parts of London; you will find the same class of people, comparatively speaking, as you do in the opium shops in the East.

1033. But I understood you to say, Sir William, that you could not regard the opium habit as at all generalised amongst the respectable classes in Bombay?—No, I do not think it is.

1034. It is exceptional?—But still a good many use it.

1035. Would you give us an idea. Amongst adults would there be one in ten who smoke opium?—No, I do not suppose there would be.

1036. Not even one in ten?—No. But I could not say for certain, because men will not tell you what their habits are, and they have a happy knack, if you question them, of often saying what they think you would like them to say.

1037. What is agreeable? Are they ashamed of the habit?—No.

1038. Not in Bombay. I mean among the more respectable persons; those who smoke opium are not ashamed of the habit?—I do not think so; no.

1039. You have not perceived that they tried to conceal it from others?—No; but they will not tell you unless you are friends of them and know them pretty well. They will not come and proclaim it in the street.

1040. Have you been in a Sikh campaign? Have you had any experience of the Sikhs?—Only to a small extent when I have been with regiments; there have been Sikhs in the regiment; but I have never been in the Punjab much—only travelling through it occasionally.

1041. Are there large or considerable populations in India among whom the use of opium is practically unknown?—There are large sections of the population who do not use it; but I could not say that it would be practically unknown, because there would be a small minority of people all over the country who do use it.

1042. And even throughout the country there is more or less consumption? It is not confined, I mean, to certain races?—I do not think it is confined to certain

racies, although certain races are more particularly addicted to it.

1043. How do you explain that? How do you explain that, as we are told, the Sikhs and Rajpoots seem to use opium as a diffused and general habit, as we use wine and beer in this country?—I think the explanation, perhaps, may be, as regards the Rajpoots, that they are the gentlemen, the upper classes of the country, although there are a great many poor Rajpoots, and I think they took to it when it was more expensive than the means of the lower classes allowed them to get. But that is pure supposition.

1044. Quite so; you do not speak very positively?—No, I do not.

1045. And you could not give us information?—I could not tell you why they do it, except that they are the better class; they use it just as we might use champagne.

1046. Then you have no information that you could give us as to the relation of the opium habit to race?—No.

1047. Perhaps you might have some other remarks to offer generally?—Yes, I have one or two other remarks that I should wish to offer. It will not take me long. I should wish to draw attention to the fact that insurance societies do not impose a higher rate on opium eaters. With respect to that they are guided by the medical officers of the societies. They were addressed on the subject some little time ago in Calcutta and Bombay, and they all gave the same answer.

1048-9. Is there a large amount of insurance work done in India on the basis of a large number of facts?—Yes; many of the insurance offices were addressed on the point, and they would not increase the insurance. They are guided by the medical men.

1050. That would refer to natives, would it not—insurance of natives?—No, it referred to insurance of Europeans, and natives, and all classes.

1051. But are we to understand that any proportion of the European community are opium eaters or smokers in India?—Well, I think there are a few. I was one myself.

1052. For a short time; you were not an habitual smoker?—Well, I was experimentally.

1053. But as habitual opium users?—Oh, yes, there are a few.

1054. Only a few?—Only a few.

1055. (Chairman.) Is the practice of life insurance largely resorted to among the natives?—Yes, it is; a great many insure their lives now, during recent years.

1056. With European offices?—Yes, there are several offices that take insurances of native lives and European lives; they do not limit themselves.

1057. And there are some native associations as well?—Some of the directors of these insurance societies are natives of course. Then I should like to draw the attention of the Commission to some erroneous statements which have been made. One is, that so much land being taken up in India for opium, enough was not left for the growth of cereals, and therefore famines occur; the fact being that it is only a decimal portion of the cultivable land that is taken up with opium. The famine in Rajputana, which was caused by the total failure of rains one year and the ravages of locusts the next year, was said to be caused by the want of food caused because of the opium cultivation in Marwar. I do not think there is a field of opium in Marwar. On the contrary, to my knowledge, hundreds and thousands of people emigrated from Marwar, and went straight across into the opium district of Malwa, a distance of two or three hundred miles, where they found food for themselves and water and grass for their cattle, when they could not get it in the place where they came from. Then, again, the famine in Orissa, in 1868, caused by inundations, was said to be caused because the cereals could not be cultivated in sufficient amount; whereas there is not an acre of opium land in Orissa. Well, such absurd statements as those are put in print. Then, again, it is alleged that the opium users cannot attend to their business. As I have said before, some of the most shrewd business men take their opium. Clerks and people who have work to do in offices, many of them you would be surprised to find taking their opium. Then it is said that opium smoking is more

deleterious than drinking opium water or even eating opium. This is quite incorrect. Opium smoking is harmless; and, besides, it is not crude opium that is smoked—it is a preparation of opium known as chandul or chandoo.

1058. (*Sir W. Roberts.*) How much per cent. of real opium does that generally contain?—It has never been investigated, but the combustion which the chandul undergoes when it is put into the pipe and put into the lamp must destroy much of the narcotic properties, and it has not yet been ascertained authoritatively what really goes up the pipe-stem into the smoker's mouth. That is a subject which requires investigation. Now, when crude opium is taken, it has a different effect, because it must be dissolved and absorbed by the stomach into the system, and therefore it is liable to produce, in the first instance, constipation, and afterwards, by slow digestion and its probable consequences, diarrhoea. Then, that the effect of opium is to produce torpor and sleep. This is quite incorrect. The first effect of opium is exhilarating and stimulating. I compare a pipe or two of opium to a glass or two of good champagne as regards its good effects, and I compare several pipes of opium to several glasses of brandy and water; drowsiness comes on, but without any argumentative or quarrelsome stage. There is another very silly thing that they have frequently said, that opium is so potent persons must lie down to smoke it; they cannot take it standing up or sitting down as a Britisher would drink his gin or his beer. That is quite incorrect. You can smoke your opium sitting down, only it is custom and habit and convenience which causes them to recline; you see that any day in the opium shops. Then it is said that opium causes immorality. I have stated that in small quantities opium is exhilarating and stimulating. No doubt, as with all stimulants, the passions are temporarily excited, but in larger doses it is exactly the reverse. Another statement is that opium prevents the missionary enterprise of converting the Buddhist and the Hindoo. I will not go into that subject; I have said it already in a lecture I gave, that I do not think there is an atom of truth in the assertion. It may be mentioned that the ban placed on spirits by Eastern religions and the long fasts imposed are potent reasons why opium is used. The effects of chandul, which is prepared opium, have been confused with those of tye chandoo, muddut, and hemp. Muddut is a mixture of inferior opium and bran; tye chandoo is a mixture of the refuse of half-burnt chandul scraped from the pipes, the refuse of opium, ganja or bhang, and bad tobacco. Ganja is the dried flowers of the *cannabis sativa* or hemp plant; bhang is the dried leaves and stalks. The effects of chandul, carried to excess, are blank or sleep, or you may call it the *nirvana* of the Buddhists. The effects of ganja are vivid illusions of the brain which may turn to insanity; and if you refer to the statistics of the Indian lunatic asylums you will find that while hundreds are reported as having come into the asylums from the effects of liquor and bhang only three or four or five or six would be returned as coming into the asylums from the effects of opium. And in the jails in the same way. The deaths from opium are practically nil.

1059. (*Sir W. Roberts.*) I am only going to ask one more question. I do not know whether it is possible to answer it. How is it that the opium habit does not spread amongst the Europeans in India. I mean the habitual use of opium?—Amongst the Europeans?

1060. Yes?—Because they have been brought up from their youth upwards to believe in beer and liquor, and gin, and other things; and then it is a troublesome thing, smoking opium. It is too troublesome for a European.

1061. You would not admit that it was due to some profound constitutional difference?—No; I do not think so.

1062. But of course you would not be positive?—I do not think the constitutional difference has anything whatever to do with it. It is simply habit, and bringing up from childhood. We will say the Rajput child sees the opium pipe from the day of his birth, or as long as he can notice anything; the European child sees the gin or the beer.

1063. But you know new habits have arisen even within recent times. The original habit was the alcohol habit; then came the tea habit, the coffee habit, or the tobacco habit?—Yes.

1064. And the British people did not show them-

selves at all loth to take up these additional habits. How is it that in India they have not taken up the opium habit?—Well, for one reason it is a troublesome thing to smoke opium. You cannot take it like a cigar, and put it in your mouth and smoke it away; you must have a lamp.

1065. But opium-eating is easy enough?—Well, but that is nasty; it does not taste nice. But I have seen many Europeans eat a sweetmeat in India which contains a deal of opium.

1066. But they have not acquired any habit in that direction?—Well, they do not acquire the habit. I will not say positively why, except that I think it is simply a matter of bringing up from youth upwards.

1067. (*Mr. Wilson.*) I do not quite understand your position, Sir William. If I understand rightly, you think on the whole it is a good thing?—I will not go so far as to say it is a good thing, because I think we should be better, all of us, without any liquor, or opium, or anything of the kind; but I mean to say this, that the use of opium does more good than it does harm.

1068. Then it is a good thing?—Yes; that is a good thing.

1069. We are going to India; would you advise us to go in for it?—I would advise you to try it certainly. Do as I did, go to the opium shops.

1070. I did not say "try it," but "use it"?—Use it.

1071. You advise us to acquire the opium habit?—No; I do not advise you to acquire the opium habit, but I advise you to go to the opium shops and see for yourselves, and all of you have a pipe or two.

1072. You do not quite catch my meaning, I think. I do not quite understand whether you think on the whole it is a good thing or not to take opium?—That depends upon the situation the person is in, and it depends upon whether he has the means of using something else which he likes better.

1073. Would you tell me of a situation in which it is a good thing?—Well, I have already told you several situations where it is a good thing. When a Rajput has to ride 30 miles on his camel through the sand he takes his "stirrup cup" of opium before he starts. They used to bring me a "stirrup cup" of opium when I was starting on a march in early morning in Rajputana.

1074. Well, with reference to the people that you saw in the opium shops. You said they had probably all been at the hospital and failed to get relief?—Well, the great majority of them no doubt had been to hospitals, and perhaps were going to hospitals then.

1075. Do I understand that the greater part of the people that you would meet in these opium places are practically sufferers from some serious disease?—I have given the numbers, I think, in a pamphlet which I wrote on the "Opium Shops of Bombay"; but I should say, at a rough guess, that half the people who are in these opium shops, or, as you like to call them, "dens," half of them have something the matter with them.

1076. Previously?—They have bronchial affections, or nervous affections, or sciatica, or other painful affections, and they go there habitually every day because they find that the opium pipe soothes them better than anything else.

1077. Do you mean that a larger proportion of the persons in these places are invalids than anywhere else?—Yes, certainly.

1078. And that they resort there for the purpose of relief?—They resort to them for relief.

1079. Have the ailments, then, anything to do with the previous habit of taking the opium?—The ailments have nothing to do with it. The people in those shops have been described as suffering from the effects of opium, whereas they have been suffering from the disease for which they went to the shops to get relief.

1080. Then you said that they would not tell you if they took opium. Is that because they think it is disgraceful?—They would not tell you.

1081. You said you had asked—I think our Chairman asked you, or Sir W. Roberts asked you, about these persons, about other people taking opium—you said they often would not tell you whether they took it or not?—I mean not with reference to the people in the

*Sur.-Gen.
Sir W. Moore,
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15 Sept. 1893.

Sur.-Gen
Sir W. Moore,
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Q.H.P.

15 Sept. 1893.

opium shops, because their presence there shows that they take it, but with reference to the better classes.

1082. Yes; I understand?—They would not tell you unless you knew them, and became acquainted with them. If you met a man in the street, and said, "Are you an opium smoker?" he would probably say, "I do not understand."

1083. Is it because they think it is disgraceful?—No; I do not think it is because they think it is disgraceful.

1084. Then why? What do they think?—Well, they would tell you if you became friendly with them, and knew them. But they would not proclaim it in the street.

1085. No. But I gather from what you said, that there was an inclination to conceal the fact that they took opium. What is their motive for such concealment?—I do not think there is any inclination to conceal it, because they will tell you if you know them. They will not come and volunteer information to anybody they meet.

1086. (*Sir J. Lyall.*) Is it the case, Sir William, in Rajpootana, it was thought a disgrace amongst the Rajputs not to eat opium?—Not to eat it?

1087. Yes, it was the same sort of disgrace which used to exist perhaps two generations ago in England, with respect to a man who would not drink wine?—No, I do not think so. I recollect very well one night, I was in the State of Marwar, the Political Agent of Marwar, and myself, were sitting in our tent with four or five gentlemen—Thakoor—and they were asked what they would have, and two or three of them had some brandy which we had with us, but one gentleman said, "No, he would not take any," and all the others said, "Oh, no; he wants to go home to his wife, and smoke his opium pipe." They used to chaff one another in that way.

1088. (*Mr. Wilson.*) I have only one other question—whether you have any idea of the quantity of opium consumed by these different classes of persons of whom you speak?—The quantity differs very much indeed. I should say, perhaps, that the average of what I have seen of a man who uses opium moderately is three or four pipes—he would probably use three or four pipes.

1089. What weight would that represent?—That would represent a weight of 50 or 60 grains, perhaps, of chandul, made into four or five little balls, which is put on the pipe at the lamp.

1090. (*Mr. Pease.*) You spoke of the persons going out into the desert with their camels, and there taking their opium as sustenance?—Yes.

1091. Do you consider that there is anything nourishing in opium, or that it is only a staying power for a while until he could obtain solid food?—It prevents what we used to call a few years ago *eremacausis*, or waste of tissue. The young camels are sent out into the desert of Rajpootana for the whole of one season, and then they are sent up to the Punjab for the next season, because they get a different kind of grass there, and they say that if they are not sent up to the Punjab after having had one season in Rajpootana they will never become strong camels; and they go out right into the desert districts, where there is not a village within 20 or 30 miles, and water is very scarce. Perhaps a hundred camels would be accompanied by three or four men, and all these men take their opium with them, and they live on a little flour that they take with them—grain (no rice there), and camel's milk and opium. They would not do that if they had not the opium.

1092. You think that a moderate amount of opium can be taken without any injury to the health. Would you recommend persons in this country to take regular doses of opium two or three times a day, and do you think that it would not be injurious to their health?—No, I would not recommend them to take it, and I would not recommend them to take three or four doses of spirits three or four times a day.

1093. But you believe it would not be injurious to their health?—That depends on what they would take. Some people would take a great deal more than others, just as in the same way as spirits. You cannot lay

down any quantity which a man may take. Constitutions differ.

1094. With regard to a remark that I made when a previous witness was giving evidence, there is no allusion in anything that I said with regard to the proportions of Rajputs in Rajpootana, was there? What I gave was just your own remark, "From the above, and from the inquiries instituted during the previous year, it would appear that the percentage of people to population using opium in Rajpootana is not so great as I, in common with most Europeans, had imagined." Those are your own words?—Perfectly correct, sir.

1095. There was no mistake in the quotation I made?—No mistake. But afterwards I said, in another article, that most of the Rajputs used opium.

1096. That I did not allude to in any way?—No.

1097. (*Sir J. Lyall.*) Sir William Roberts asked you whether you could give any explanation of why certain races used opium. He mentioned the Sikhs and the Rajputs. As regards the Sikhs, is it not the case that the reason probably is that their first teacher prohibited the use of tobacco?—Their first teacher prohibited the use of alcohol and tobacco.

1098. I do not think he did alcohol—well, not so strongly as tobacco; he deprecated the use of alcohol?—That may have induced the taking of opium. As I say, I think, in my evidence, "the ban placed against alcohol and tobacco in the eastern religions may have led to the use of opium, against which no ban was placed." But that is purely speculative. I could not say why the different races use it, except that it is a habit and custom, and opium is a country product.

1099. Was not the early use of opium among the Rajputs connected partly with their constant fighting in which they engaged; did not they drug themselves with opium?—Probably they primed themselves with opium.

1100. When they had to make a desperate assault, or anything of that kind?—Yes, they perhaps primed themselves with opium—or perhaps *bhanga*—more frequently. *Bhang* is more injurious than opium a great deal.

1101. (*Mr. Pease.*) Just one other remark I would like to make, and that is with regard to the question as to the occupation of the land for cereals and for poppy; is it not the fact that there was a great famine in Rajpootana in which about 1,200,000 people died?—Yes, I was there at the time. I travelled 2,000 miles in Rajpootana in the famine years.

1102. And that a great many of them went into Malwa seeking for food, and they were unable to find it?—No; they found food for themselves and their cattle, and water. There was what we call a "tur" famine in Marwar. There was no rain, no grass, and no water, and the people emigrated by hundreds of thousands—went right up into the Punjab—went up to Goojerat. A good number crossed the desert into Scinde; but the greater part went through Meywar into Malwa.

1103. They were all saved that went into Malwa?—A great number of them died on the road.

1104. There was food for them in Malwa?—There was food for them, and grass, and water.

1105. The statement that was made from Dr. George Smith was, that if the land that was in Malwa had been cultivated with cereals, and those cereals had been sent into Rajpootana, it might have saved the lives of the people there?—But how could they be sent into Rajpootana when there was no grass, and no water, and no railway? Why a camel would not carry more than he could eat. I was in Rajpootana at the time, and I saw all the people, and I can state from my own personal knowledge.

1106. The difficulty in Rajpootana was the want of means of communication as much as anything?—You see a man wanted food and water, and you could not send men, because they could not carry more than they would eat on the road.

1107. (*Mr. Mowbray.*) What sort of proportion of the population of Rajpootana are Rajputs?—About one fourth. That is where the mistake occurred. The opium habit is not nearly so prevalent among what you might call the aboriginal tribes—the half-castes, *mairs*, *bheels*, *gonds*, *menas*.

The witness withdrew

Dr. F. J. MOUTAT called in and examined.

Dr.
F. J. MOUTAT.
15 Sept. 1893.

1108. (*Chairman.*) Sir William Roberts has kindly undertaken to conduct your examination?—Thank you. I shall be happy to answer any questions as far as I can.

1109. (*Sir W. Roberts.*) I believe that you have had considerable opportunities of studying the opium habit in India?—The opium question I have, in all its relations, but not so much the opium habit, for I did not come so much in contact with it.

1110. Will you tell us what means you possessed of acquiring an acquaintance with opium?—Yes. I was Assistant Opium Examiner to the Government, I think for a couple of years, when I had to analyse and report upon the value of each batch of opium that was sent down to be exported to China. Then I was appointed Chemical Examiner to the Government. In that capacity every parcel of poisons that were supposed to have been intended for criminal purposes was sent to me for examination, and I had to report what I found in them. I never found opium in any case whatever, because it was not used by any professional poisoner.

1111. What?—I never found opium in any of the parcels sent, or substances which might have been contained in them for illegal purposes. I afterwards was appointed Professor of *Materia Medica* and Chemistry. In that position I had to teach the subject of the nature, composition, and uses of remedies employed in medicine, and amongst them was necessarily opium, by far the most valuable medicine we have, particularly in the tropics. Subsequently I occupied the Chairs of Medicine and Medical Jurisprudence, and taught the uses and abuses of opium in their therapeutic and medico-legal aspects.

1112. Then am I to understand that you did not come very much into contact with opium eaters or drinkers or smokers?—I came a great deal in contact with a colony in the Burra Bazar of Calcutta, which consisted almost entirely of opium users. They were up-country men, Marwarees, some of them bankers, some shopkeepers; men of considerable intelligence, really good business men, and the whole community of them were reputed to be opium consumers.

1113. You ascertained that from your own observation?—Yes. Of course I was well acquainted with them personally; they came to me at all times when there was anything the matter with them, any sickness, or other trouble. They were not a large colony; but they were a somewhat fluctuating body; many hundreds of them were coming and going in my time.

1114. Then what was your impression as to the state of health and longevity of these people?—I never in my life saw finer men of their respective classes, more intelligent or more active men, or men who showed less signs of being under the influence of any drug or narcotic than both the Chinese colony and this other community of Marwarees I have spoken of in relation to the Burra Bazar.

1115. Do you consider that you obtained accurate information as to the amount of opium that they would use?—No, because it is like tobacco smoking—where one man uses one cigar another will use ten; and the same with regard to pipes. I do not think that you could establish any exact definite quantity which they used. Mr. Monro, who was Commissioner of Police here, and is now a missionary in India, after being Inspector-General of Police there, has given approximately the quantity used per head of the population in Bengal, but you cannot rely much on it as the doctrine of averages does not apply to such questions.

1116. The "mixture three times a day" is a drachm, I think?—I do not know.

1117. But used you to see these people habitually smoking?—No, not habitually; at various times of the day; they did not use opium all day long.

1118. Recurrently, if you like?—Yes, decidedly.

1119. Nearly all of them?—Nearly all of them in that particular quarter use opium, I believe.

1120. And is it your impression that the habit continues for generation after generation among these people?—Yes.

1121. I hope the opium habit is not so old in India that you can speak of it as going on for generation after generation?—Yes, I can, for long before we went to the country it was in use. Smoking is not an Indian vice.

1122. You can speak of the opium habit in some parts of India as having been practised generation after generation?—From historical evidence I can.

1123. Yet the population continues healthy?—Perfectly healthy; amongst them are the finest populations in India.

1124. I suppose it is impossible that you could state facts proving that to the Commission?—No, because I never made special inquiry into this point. Those were the days before the opium question had become a burning question, and it only became interesting to me from my professional position in the city in the heads of which I lived 13 years. They came to me on all possible occasions to consult me as to their illnesses and their family distresses, and thereby I had a considerable personal knowledge of them.

1125. Did the habit go on increasing as years went on?—No, I saw no difference.

1126. Then you would compare the use of opium amongst these people to the use—the moderate use—of alcoholic liquors amongst ourselves?—Undoubtedly.

1127. And quite as harmless?—Yes, quite, in fact more so, because a man shows a flushed face and many other indications of familiarity with alcohol, but you could detect nothing of the kind in the case of those who used opium. They were all temperate; I never saw, in the whole 13 years I was living amongst them (and I saw them daily); they came to me at the outdoor dispensary, or at the hospital, and as a friend, and I never saw, in all that time, an opium drunkard.

1128. Drunk from spirits, do you mean?—No, from opium.

1129. So that these particular groups that you had experience of had not even a minority of opium "sots," as they are called?—I scarcely understand your question.

1130. You have heard of the opium sot?—Oh, yes.

1131. You saw nothing corresponding to that amongst them?—Nothing whatever. What they were in the evening, when work was done, and the day was over, and they went to their rest, we had no knowledge of, because they were in their own houses; but there was never a brawl in the streets, there was never a man amongst them brought up before the police for any disturbance of public order, in the whole of that time, and I was in constant communication with the police authorities, for I aided them greatly in that part of the city in which I lived, in maintaining order.

1132. Still, I presume you admit that the opium habit has its bad side?—Yes, in excess, undoubtedly.

1133. Will you explain to the Commission what you yourself have observed as to the evils of the opium habit?—I never saw anyone who exhibited such an amount of misuse of opium, not one in the whole of that time, so I cannot speak to it from personal knowledge.

1134. So that you have nothing to say but praise of the habit?—Given the necessity of a stimulant, so far as my knowledge went, certainly.

1135. Do you confine your opinion merely as based upon your own experience of these two communities?—To these two great communities chiefly, but there used to come to the hospital up-country men who were temporarily in Calcutta. I knew nothing more about them than their nationality.

1136. You did not see any sufferers from opium?—No, not one.

1137. Did they not even suffer from what we should expect, in this country at any rate, constipation—yellow eyes, you know, from embarrassed livers?—I knew nothing about their health until they came to the outdoor dispensary, or to the hospital, to consult me medically; but those were not the effects that were visible in them at all. Liver disease was rarely found amongst them.

1138. Well, would you sum up your experience on this question?—You mean my general experience?

1139. Yes?—I would rather, if you will allow me, tell you my experience of opium in relation to crime and insanity; that is a subject I studied particularly.

1140. We should be very glad to hear your account of that?—Taking the connexion between the use of opium and crime, I collected the statistics, and I have here the report of the prisons of the Lower Provinces

Dr.
F. J. Mearns
15 Sept. 1893.

for five consecutive years; wherein are represented all the conditions connected with the imprisonment of 302,000 prisoners of both sexes and all ages—every detail connected with them, their age, sex, occupation, caste, and other circumstances—all these particulars are contained in this volume, and in the whole of it, amongst that large number of people, there was not a single crime that was attributed to opium, either its use or abuse. Had there been such, they would have been placed on record by the magistrates who sent in the returns.

1141. Is alcohol mentioned?—Alcohol, no; alcohol is not mentioned in my returns. We had a very small hospital at that time for the use of Europeans, but still we had a few cases of delirium tremens and similar affections. I will hand in to you the report to which I have alluded, because to give you even a resumé of the details in it would be very difficult; it is a mass of figures from beginning to end.

1142. That is your account of the relation of opium to crime; now with regard to lunacy, what have you to say?—I was official visitor of lunatic asylums, and I had constantly to visit them, and report upon their state, as to the causes of insanity, their treatment, &c. No figures had then been collected to enable me to judge, but I state generally in a series of papers, which I wrote in the "Lancet" (and which I hope you will allow me to present to the Commission), my views upon the subject.

1143. (Chairman.) Will you hand me over those papers?—Certainly, but there is one which I wish briefly to refer to further on, then I will give them to you, my Lord.

Now, here are the "Admissions to the Asylums of Lower Bengal for Ten Years" (1881 to 1890), printed by the Calcutta Medical Society. There were altogether in 10 consecutive years 2,202 admissions, of which 641 were alleged to have been caused by ganja, 117 by spirits, and 8 from opium. That represents the statistics, on this subject, of 74,000,000 of people, so that the infinitesimal portion of a man that became insane from the abuse of opium is really not worth taking into calculation.

1144. (Sir W. Roberts.) I would like to ask you, in reference to this question, out of that total, were there more habitual users of opium, or more habitual users of spirits, or more habitual users of ganja?—There must have been more of ganja, and there is a Commission now examining into that question in India. The hemp plant grows in every ditch, and it can be easily prepared for eating or drinking. It is a far more injurious drug than opium. These figures very fairly represent the difference in character for evil of these three substances. I have already given you the tables as to crime within the jails; now how is it as to crime without, which came under the supervision of the police. Here is a paper on the opium question in Lower Bengal, by Mr. James Monro, who was recently Commissioner of Police here, and who was in the magistracy for a long time in India before he became Inspector General of Police. I shall place this document at your disposal. He says: "Are the tendencies of the people in districts which consume opium more criminal than those of other districts in which the drug is sparingly used? The answer is distinctly in the negative. The division of Orissa, which consumes most opium in Lower Bengal, is the least turbulent and troublesome in criminal respects in the whole province" [that contains between 5,000,000 and 6,000,000 of inhabitants]. "In the turbulent districts of Eastern Bengal, such as Dacca, Backergunge, Mymensingh, Khoolna, Jessore, and Pubna, the consumption of opium is trifling. During the years in which I was at the head of the police in Lower Bengal (if a reference to personal experience is permissible), I can testify that the use or abuse of opium formed no perceptible factor in the production of crime throughout the province. No case in which the connexion of opium with crime was established ever came under my notice." This gentleman is now a missionary in Bengal, and a very able one. Then he states here: "I most unhesitatingly assert, on the basis of criminal statistics and criminal experience, that the use or abuse of opium is not, to any appreciable extent whatever, a factor in the production of crime in any of the districts in the province of Lower Bengal." Now in this other paper* there is a reference which has recently

been made to the Chief of the Police in Calcutta as to the amount of crime committed under the influence of opium. The following questions were asked of the said Commissioner of Police:—"Is there much crime traceable or attributable to the habitual use of opium? If so, what kind of crime? Crimes of violence? Or assault? Or robbery? Dacoity?" (that is house breaking) "Theft? House-trespass, &c.?" In reply to which he says: "The only crime that can be, in any way, attributable to the habitual use of opium is petty pilfering, but even this is rare. A petty thief, who is an habitual opium smoker, occasionally steals a lotah, or other small articles that come handy, to enable him to satisfy his craving for the drug. No crime is known to be an after effect of opium, and police experience goes to show that the use of opium does not tend to any crime of daring or violence." Another question is: "Is there such a thing as the 'drunk and incapable' of alcohol referable to opium?" Answer: "There is no such thing as the 'drunk and incapable' referable to opium." Then there are some questions also put to two native gentlemen. I will not trouble you with that, but there is a great deal of detailed information there regarding the influence of opium on the Native population. One of them says that "the Chinese and Siamese in the Colootollah section of the town are all opium eaters, but are nevertheless very intelligent and smart."

1145. The Chinese in the Straits Settlements?—No, in Calcutta. There is a colony of them. I forget now how many there were, but I think 300 or 400. I, however, saw the Chinese colony of 40,000 at Singapore, where I visited the opium farm and Chinese colony with the Governor, who gave them the highest character for sobriety, intelligence, and abstention from crimes of violence.

Another deposes that "hundreds of men over 70 years of age can be seen amongst the opium eaters of Burra Bazar" (that was the community I was referring to in answer to a previous question) "and they enjoy good health. I know an elderly lady who will complete her 97th year by the end of June, and who has been using opium for the last 55 years. She moves about without help, and eats her food well. She is slightly deaf, but does not suffer from any other bodily infirmity." He further says: "The vices of alcohol are unknown to opium. The police returns show that opium eaters are the most peaceful class of citizens, and the only criminal offence committed by men who take opium is petty theft, committed by the low class madat smokers. Alcohol is more expensive than opium. Alcohol renders a man drunk and disorderly, whilst opium makes him solemn and quiet."

1146. And you endorse those views?—Quite. Some of these gentlemen were probably pupils of mine. They are now native practitioners, men of great ability and large experience, who can be thoroughly relied upon for their accounts of the diseases that come under their cognisance. Here speaks another of them:—"The therapeutic value of opium no one will deny—it is used in dysentery, diarrhoea, cholera, rheumatism, neuralgia, diabetes, cough, &c., are undoubted, but its value as a remedy, curative, and prophylactic, in malarious fevers, is not so widely known. I will relate to you a circumstance which illustrates the value of opium in malarious districts. During an epidemic of fever in the Terai districts near Bareilly, in Rohilkund, three compounders were sent with a stock of medicine. Of these three, one smoked tobacco only, and he died there of fever: the second man, who was a bhang eater, returned to Bareilly with a bad type of remittent fever; while the third man, who was a confirmed opium eater, returned after the epidemic was over, much improved in health and experience."

1147. That is rather a narrow experience, is it not?—It is a narrow experience, and these are merely typical cases. I do not think much reliance need be placed on these small statistics. Such statistics should be drawn from a much larger field of observation to enable any sound general deductions to be drawn from them; but still, there is quite sufficient in them to show that so far as I witnessed, opium in moderation was not a destructive agent in any sense, of health, morals, or manners, or productive of crime.

1148. (Mr. Wilson.) There was just one thing that you read us out of that book which struck me. One of the persons whose statements you read said that opium

* The discussion by the Calcutta Medical Society on the effects of the habitual use of opium on the human constitution. July 1892.

makes them solemn. We were told it was exhilarating?—It tends generally to quietude and repose, and they doze off to sleep in most cases; when you wake them up they are intelligent and sharp, and are able at once to go to their work or business. Another question I have heard raised in this room I should like to touch upon. I never found one of those gentlemen (and many of them were bankers, merchants, and men of good position and repute) who was in the least ashamed of being an opium smoker or eater, or made any attempt to conceal the fact. If I were attending them medically, and I asked them whether they used opium, they readily told me; but in most cases it would have been a matter of idle curiosity for me to ask them, as I knew that they were practically every one of them opium consumers. And as to their loss of caste, and all that sort of assertion, I witnessed nothing of the kind.

1149. I understood that you yourself lived between a colony of eaters on the one side, and a colony of smokers on the other?—That was so.

1150. Then as regards these people you have been speaking of, do any of them indulge in both practices—eating and smoking?—I do not think so.

1151. (*Mr. Pease.*) It is the practice, is it not, to mix opium with ganja?—Not amongst those that I witnessed. It is done, I was told, in the Straits Settlements and other places out of India, and there it is said to be extremely mischievous.

1152. You drew a distinction between the action of the two; but I thought they were frequently taken in conjunction?—Not, so far as I knew, amongst the communities I lived in the midst of.

1153. (*Chairman.*) Are there any further observations which you would wish to make?—Allow me, my Lord, to read you my formulation as contained in my papers in the “*Lancet*.” I say as follows, in summing up all I know of the subject, both from reading and practical experience:—“I maintain, and have not yet seen any authoritative proof of its inaccuracy, that the habitual use of opium in India is neither injurious, degrading, nor immoral; that it has caused no general mental or physical deterioration of the races of any part of India in which it is in general use since the control of its cultivation and distribution has been undertaken by the Government of that portion of the country which is under its direct rule; that it is not a general incentive to crime or destroyer of reason; that it is a valuable febrifuge and

“prophylactic in the deltas of the great rivers and malarious districts generally; that any alternative which may, and indeed must, follow its compulsory disuse or employment only as a medicine for the enforcement of which no trained agency at present exists would be a resort to much more harmful stimulants and narcotics than opium ever has been, or can be;” [and that has really occurred; where the price of opium has become prohibitory they have taken to alcohol; where the circumstances have been the reverse, they have abandoned alcohol and taken to opium—so that it is no longer a speculative opinion] “that the reasons for its proposed suppression, should such a proceeding be practicable, are unsound, visionary, and calculated to cause much undeserved misery and suffering amongst the peaceable nationalities, and would be actively resisted by the more manly and warlike races of India, whose mental, moral, and physical qualities are the best possible proofs of the absolute inaccuracy of the anti-opium contention; that it shares with the many narcotics and stimulants in use in all civilised countries the characteristics of a poison when used in excess, but in a minor degree to most of them; that such excess is exceptional in India; that the revenue raised from its sale in British India, as an excise, is no more immoral or degrading than the revenue raised in Great Britain from the spirit licences and other means of taxation applied to alcohol in its various forms, or to tobacco, which is also in universal use; that the fiscal action of the Indian Government in restricting its use is a really humane and moral measure when contrasted with the spirit licences issued in Great Britain, and is itself in practice and intention a thoroughly moral proceeding.” That was the result of my observations, and those remarks based upon the study and use of opium in my practice as a hospital physician represent my firm convictions on the subject. If there is any other question I shall be happy to answer it.

1154. (*Mr. Pease.*) Is it not a fact, as stated at that meeting from the report of which you have made some quotations, that opium is taken for the purpose of exciting sexual desire?—Yes, I believe so; but as a matter of fact it rapidly produces a very different effect, and is said to have a marked tendency to diminish the reproductive powers to such extent as to influence the increase of population. This, I submit, is deserving of further consideration from a Malthusian point of view.

The witness withdrew.

Sir GEORGE BIRDWOOD called in and examined.

1155. (*Chairman.*) How long were you in India, Sir George?—Will you allow me to read my statement? I can get through it quicker in that way. It is taken from the remarks I made on Mr. George Batten’s paper read at the Society of Arts in 1892, and is as follows: “I wish here to speak only of my personal observation of the habitual use of opium during my 15 years’ latter residence in Western India. I paid the closest attention to the subject during the whole of the years I was there, and had every kind of experience in relation to it, having at different periods been in medical charge of the Southern Mahratta Irregular Horse, the 8th Madras Cavalry, the 3rd Bombay Native Infantry, a battery of Artillery, the jail and civil station of Sholapore, and the steam frigate “*Ajdaha*.” Now with regard to that experience, I would like to point out the difference in the conduct of European troops while on the march as compared with that of the native troops. Whenever I marched with European troops they were a constant cause of anxiety to me, both on medical grounds, and on account of the trouble they gave in their dealings with the natives. I recollect, on one occasion, quite a riot in a village through which European troops were passing; they had broken into the spirit shop, and the young “Queen’s” officer in command was just about to flog the *patel* of the village for their misconduct when fortunately I was able to stop him by telling him it would be as bad as flogging a mayor in this country. On the other hand, the native troops, when they were on the march, never gave any trouble, either in regard to drunkenness or women. On the line of march this is what would habitually happen with them. When a halt was sounded, they would break themselves up into small groups of four or five,

and sit for a while, and then one of a group would in a quiet way take from his pocket a little lump of opium, and proceed to divide it with those sitting with him; and there they would sit awhile meditating, swallowing the opium and meditating; and by the time the halt was at an end, and the regiment reformed and marched on, they were fully refreshed and perfectly steady. “Subsequently, and for the remainder of my service, I was attached to the Jamsetjee Jejeebhoy Hospital, Bombay, and was in succession Professor of Anatomy and Physiology, and of Botany and Materia Medica, at Grant Medical College. I was also a J.P., and a visitor of the jails in Bombay, and the year I was sheriff I regularly visited them. Besides this, I was probably more intimately familiar with all classes of the native population than any other European of my generation; while, as an ever-active journalist” (I was a journalist from the first day to the last of my service in India), “I was mixed up in almost every discussion of this sort during my time in Bombay. Well, in all the experience—as here precisely detailed, and capable, therefore, of being checked at every point—I thus had of the indigenous life of Western India, I never once met with a single native suffering, or who had ever suffered, from what is called the excessive use, or from the habitual use of opium; and, excepting cases of accidental or wilful poisoning by opium, I never knew of a single instance of death from its use; and I have never met with anyone who, in his own personal experience, has known a case of death, or of injury to health, from the habitual use of opium as practised by the people of any part of India proper.” I exclude Burmah; I know nothing of it.

Dr.
F. J. Mount.
15 Sept. 1893.

Sir
G. Birdwood.

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G. Birdwood.
15 Sept. 1893.

1156. (*Sir W. Roberts.*) You exclude suicides, of course?—Yes. “So far as I can remember, in the printed tables used in Indian civil and military hospitals for the entry of diseases, there is no column for the ‘opium habit,’ nor for ‘deaths from opium.’ On the strength of my personal experience I should be prepared to defy anyone to bring forward, from their personal experience, a single authentic record of death, or shortened life, from habitual opium eating or drinking in India. If anyone can, let him, and the means of verifying his or her statement, are always, within the current generation, accessible in India. On the contrary, so far as my experience goes, the healthiest populations of Western India are those distinguished for their so stigmatised excessive use of opium. I refer to the people of Gujerat generally, and more particularly to the people of the Kaira district, and also of the neighbouring district of Broach. As to opium smoking, it is, from my experience of it, as innocuous as smoking hay, straw, or stubble.” I never could perceive the slightest effect from it upon myself, and how it has any effect on other people I do not know. I think it must result from the generally vicious conditions of the lives of the frequenters of the opium dens in China.

1157. Do you not think there may be a special toleration?—Yes, it may be that; but there is the fact that morphia is very readily decomposed by heat, and my presumption is that the morphia is decomposed in the opium pipe before it reaches the lungs. I think this is very probable, from my own experience of the absolute innocuousness of opium smoking. This was stated by me in 1881 in the “Times,” and the Society for the Suppression of Opium engaging in controversy with me on the subject. I had collected, through Messrs. Henry S. King & Co., a large number of opium pipes which had been used, and samples of fresh *chandu* from every port in the East, but when I offered them to the Society for the Suppression of Opium to have analyses made, which would have determined this point at once, they politely declined; and I made over the collection to the Kew Museum.

1158. I do not quite understand how that can settle the question of decomposition of the morphia in the pipe?—If you can prove that the morphia, which is the “magistery” of opium, is decomposed in the pipe, surely it also proves that the evil effects attributed to opium smoking cannot be truly due to it.

1159. They might be attributable to the slight change in the alkaloids?—Yes, that might be so; that is a very interesting question, and it is very desirable to clear it up. As I said, I gave all my pipes, and all my samples of *chandu* to Kew, and there they are; but I do not advise their being analysed now, because the virtue of the *chandu* may have disappeared by this time. But here is a very remarkable fact. The opium that the Chinese prefer for smoking is Indian opium. Now, Indian opium contains only 2 per cent. of morphia, whereas Turkish and Egyptian opium, the kinds used for the production of morphia, contain 7 per cent., 8 per cent., and 9 per cent. of morphia. But since the Government of India began fostering a falling off of the importation of Indian opium into China, Persian opium has taken its place. Persian opium has scarcely a trace of morphia in it, not more than 1 per cent., if so much. From experiments I have made on inveterate tobacco smokers I am satisfied that a great deal of the pleasure derived from smoking that drug is purely psychical. I do not whether there is anyone here greatly addicted to tobacco smoking, but if there is I would almost like to try the experiment now, to blindfold that person, and put a cigar into his mouth, and pretend to light it. I am sure he would enjoy it immensely. Nine out of ten persons on whom that experiment is tried find that they do not know a lighted cigar from an unlighted one.

1160. But would you suggest that a new smoker, if he smoked in the dark, would not be sick?—Well, I only smoked a cigar once in my life, and it was in the dark, and I was dreadfully sick. It may appear rather fanciful, but I myself would like to prepare a consignment of Indian monopoly opium from which the morphia had been extracted, send it to China, and see the result.

1161. Do you not think that is like a proposal to make a beer without alcohol; do you think the British public would take beer without alcohol?—I do not think the British public would have their beer without alcohol,

but I think the Chinese would smoke their opium without the morphia. But the great thing is to have some analyses, two or three, made at different ports of the East, it could easily be done, of *chandu*, and I hope the Commission will do it. Of course a small portion of the morphia may pass over, and that would account for a good deal, but at the same time smoking *chandu* never produced the slightest effect upon me any more than if I had sucked an unlighted straw. “I have, therefore, always presumed that the morphia in the ‘smokable extract of opium’ is all decomposed in the flame of the lamp at which the opium pipe is lighted, before the smoke from it reaches the lungs. This, however, is only a presumption, and in one case, examined by Professor Atfield, morphia was found in the ashes of an opium pipe used by a smoker in the East End of London. But be this as it may, we find in China, as in India, that nowhere are the native populations so robust, industrious, and thriving as in the principal opium-producing provinces of the Empire.” Of course I am not speaking here from my own experience, I am speaking on the authority of the Reports of Dr. Ayres (on the “Jails and Hospitals of Hong-Kong,” a most valuable report), of Mr. Donald Spence, Acting Consul at Ichang, Mr. J. G. Scott, C.I.E. (in his “Report on the Administration of the Northern Shan States”), and others.

1162. (*Chairman.*) Is Professor Ayres’ Report a Parliamentary Paper?—It is a Colonial Office Paper. “I well know the Bombay den kept in my time by a Chinese ‘gentle convertite’ to Christianity. It was the one den in a city with a population second, in the whole British Empire, only to that of London. Yet I never saw” —

1163. (*Sir W. Roberts.*) May I ask what was the date of that observation?—It would be 1865–66 or about that time. “Yet I never saw more than ten or twelve opium smokers there at any time—poor, lost souls, whose miserable, physical, and moral degradation and depravity it would be impossible for even descriptive reporters and sensational photographers to exaggerate. But who were they? The dregs of the lowest outcasts of the greatest emporium of trade in the Old World outside London, and the sink of all the miscellaneous vagabondage of the Indian Ocean. And as for the real causes of their sufferings I will only here say that, so far as I could ever ascertain, they had nothing to do with the opium pipe, which seemed to me to be simply the last palliative of their ‘disnatured torment,’ until enfranchised of it all by death, which generally overtook these cases of complicated and perverted nympholepsy in from three to nine months.” The worst cases were those of smokers who had recourse to opium smoking on account of their perverted nympholepsy. The immorality of the young is a comparatively innocent thing, but all old men know that directly the degradation of nerve tissue begins immorality takes the most perverted forms, and these cases of extreme opium smoking were always of men in the extremity of senile nymphomania, and they took to the habit obviously to allay their torment.

1164. May I ask if the condition resembles what sometimes follows in cases of organic disease of the spinal cord?—Exactly.

1165. And yet no disease of the spinal cord has been in existence?—I had nothing to do professionally with the frequenters of the opium dens, but I was always a very curious observer of such things quite independently of my professional work. I saturated myself during my residence in India with the observation and study of native manners, customs, and institutions, and it was simply in the pursuit of this knowledge that I visited the Bombay opium den. “I, on the contrary, holding that its habitual consumption is essential to the health, wealth, and happiness of a vegetarian tropical people, would freely throw the cultivation and manufacture of it open to private enterprise, and raise as large a revenue from its export from India as it would bear.” Anything that would tend to deprive the native princes of their revenue from opium would be a political error of capital magnitude. The great difficulty of our position in India is the introduction by us of an expensive scientific government beyond the economic capacity of the country to support. This is particularly hard on the native States, and to deprive them of the one revenue which they can raise without causing any discontent would be, as I have said, a political blunder of the very greatest magnitude. All I have to say in conclusion is on the one point of the

new charge that has recently being brought against opium—that it is conducive to immorality—that, in the language of Dr. Maxwell, “it promotes lust.” I think that is a very heedless charge, because it is one which is so very difficult to answer in the straightforward way in which any answer should be given. I propose to read what I have written on this aspect of the question. “This belief that the use of opium stimulates ‘lust’ has recently been revived in Europe, among ignorant people, by Perelaers’ novel ‘The Opium Fiend,’ translated from the Dutch into English in 1888 by the Rev. E. T. Venning, M.A. The belief is an immemorially old one and is still popularly held throughout the East from Morocco to Japan. But it has no justification in any body of well-proved fact. The only secretion that opium is held by scientific observers to stimulate is the cutaneous. It has been said by some to stimulate the renal secretion, but this is not generally accepted, while, on the other hand, opium is recognised as diminishing the sensibility of the ureters and bladder. Of course, through its action on the brain, opium may stimulate the reproductive secretion, as also through its action on the heart and the vascular system generally. But there is no proof of this beyond the fact that during healthy maturity everything serves to stimulate the reproductive instinct, and anything may in which faith, as such a stimulant, is encouraged. The classical instance, of Turkish origin, in support of the Old World superstition, is one to which no scientific credit would ever have been given but for its quotation by Cabanis in his philosophical work on ‘Man.’ It is that of the 8,000 alleged opium-eating Turks who fell in some forgotten field of glory, and were there found after death in a state of mentulary rigidity—all the 8,000! The story is too droll for serious consideration; but, as it still has influential currency, I may as well add that the phenomenon recorded constantly occurs in *articulo mortis*, and in my Indian experience of the death of healthy adults by cholera was universal; and the tradition is that it occurred at the death of the Prophet Mahomed.” It is a phenomenon that occurs throughout nature. A friend of mine in Bombay, Mrs. Hough, had in her garden a mango tree, remarkable for flowering every Christmas. She was very anxious to find out why it flowered out of season as well as in season; and I found out that the tree had been blown down about 70 years previously to my inquiries, during a great storm about Christmas time, and that in the agony of threatened death it at once threw out blossoms. And a similar thing occurred to a number of yuccas growing on the Esplanade at Bombay, where there was a dense row of these plants half-a-mile long. A monsoon tide on one occasion swept the whole of them down, and within three days they all burst into bloom. It was, the creative force of Nature, asserting itself in death. “Sir Astley Cooper, who devoted much study and research to the physiological effects of opium, quotes with acquiescence the statement of a patient, who took opium freely, that it was absolutely anaphrodisiac. The conclusion at which Sir Astley Cooper arrived has now, I believe, the general consent of the medical profession; and it is entirely borne out by the evidence recently placed before the world in the *Report of the Royal Commission on Alleged Chinese Gambling and Immorality*, appointed 20th August 1891, and presented to the New South Wales Parliament by command, and printed at Sydney by Charles Potter, Government printer, 1892. The extracts bearing on the present question are attached to this statement.” [*The witness handed in a document.*] “The truth is, no popular, that is to say, unprofessional, oriental evidence on this question can be accepted; and simply because of the archaic point from which it is still regarded by the people of the East. They all, including the people of India, regard the reproductive force in man as a part of the divine creative energy, to be cherished in every way, and utilised to the utmost; and their primary division of the *materia medica* is into drugs which warm or exalt this force and drugs which chill, or as they hold, degrade it; that is, into *gurm* and *tunda*; and the names they give their popular warming drugs and prescriptions are to Europeans most startling. Thus the roots of the *Atropa Mandragora*—the ‘mandrakes’ of the English authorised version of the Bible, and *Atropa Belladonna*, are named *gir-boli*, ‘house-upset’; that is, by the procreative rage of the house-father. The Belgaum Walnut (*Aleurites triloba*), and the drupes of

Vangueria spinosa and *Raudia dumetorum* are named ‘*madanphul*, popularly contracted to *maniphul*, that is, ‘rage-fruit,’ *madan* here being radically the same word as *mada*, ‘wine,’ *madh*, ‘honey,’ *madyam*, ‘magic,’ and *mathura*, or *madura*, ‘a pleasant woman,’ the name given to the two well-known Indian cities of Mathura and Madura from their traditional association with the free loves of Krishna and the *gopis*. Several other drugs, most of them perfectly inert, are named *madan-must*, literally ‘rage-rage,’ meaning ‘furious-rage’; *must* here being radically connected with the Latin *mustus* and *mustum*. The descriptive, as distinguished from the astral, name of the month of February, in Bombay, is *must-mahina*, ‘sap-month,’ or ‘rage-month,’ on the 14th day of which is held the great phallic festival of the *Maha Siva Ratri*. One of the best known aphrodisiac prescriptions of the Hindus is named *vejai*, ‘victory’; its components being nutmegs, cloves, cubebs, which are spices indeed, and niger seed, celastus seed, cowhage beans, caltrops, pellitory, mastic, safflower, and red oxide of mercury,” simply because it is red.

1166. There is no opium in it?—No opium in that prescription. “But the great classical Indian aphrodisiac prescription is named *madana Kam-Ishvara*, literally, ‘Rage Love-God,’ and meaning ‘Omnipotent procreative rage,’ and its constituents, besides opium, are musk, nutmegs, cloves, tale, camphor, red oxide of mercury, and safflower. The dose is three grains, each dose containing one-sixth of a grain of opium. Such prescriptions can only act in the way imputed to them through the imagination, and the truth is that the names of these Indian drugs and prescriptions, and the specific virtue attributed to them, are not based on any knowledge of their physiological effects, but simply on the old, exploded doctrine of phallic signatures, whether in form, texture, or colour.” It is a doctrine that was held by all the ancients, and the Hindoos are still the ancients of the world, for they have preserved their beliefs and traditions almost intact from the beginning of historic times down to the present day. “A good deal of this superstition is still lying latent in the folklore of the West, but in the East it is in rampant evidence everywhere. I remember at a *durbar* held by Sir Bartle Frere on his remarking to a native Prince who had just introduced a son to him, ‘Have you any other son?’ the Prince at once indignantly protesting, ‘and is it nothing to have this one son; and oh, if you only knew the trouble I was at to procure him, and all the prescriptions I took’; and so he went on, without any possibility of stopping him, before the whole *durbar*, loudly detailing all the philters he had had to swallow before his one and only son was born to him. Sanskrit scholars hold that aphrodisiacs played an important part in Indian mythology and literature from the oldest times. The antithesis of the ideas of the East to those of the West on the present point and which should be carefully kept in view in inquiries such as will engage the attention of the Royal Commission on Opium, is still more emphatically illustrated by one of my earliest professional experiences, and every medical man who has practised will have had some similar experience. I was attending a very high-caste Hindoo, suffering from a specific local sore. I was permitted to see it, but on proceeding to approach it for the purpose of cauterising it, he at once started back in pious horror, thrusting out his arms with outspread palms against me, and exclaiming ‘*Ishvara, Ishvara!*’—the God, the God!—meaning ‘Stand off, stand off, oh profane one!’ In almost the same breath he called out for his daughter, who, on coming in from the front garden, was directed by the father to make the simple manipulations which enabled me to properly apply the lunar caustic.”

In regard to the question of the abolition of the opium trade, supposing this was accomplished, what would happen? Already I see, in the last number of the “Bombay Gazette,” the effect of the restriction on the output of the monopoly of opium has been, to increase the exports into British Indian territory from the native States. The import of Persian opium into China has also increased; while China has actually commenced exporting opium into the Shan States and the Straits Settlements. And another very interesting fact is brought out in connexion with the shutting of the *chandri* shops in Bombay. It was a proper thing to do, and I only wish the Government here would do the same with the corner public-houses in

Sir
G. Birdwood.
15 Sept. 1933.

Sir
G. Birdwood.
15 Sept. 1883.

London; but the effect of shutting those few *chandu* shops has been to establish (and there is a gentleman in this room who can confirm this from letters he has received from Bombay) about 100 private clubs for opium smoking in Bombay, which, of course, has given an immense impetus to opium smoking.

1167. (*Sir W. Roberts.*) Have you anything further to say?—No. I rely, as a scientific man, only on the facts that have come within my own observation, and which I have detailed to you. I wish no weight whatever to be attached to my speculations and opinions; they are interesting to me personally, but as a scientific observer I regard them as of no value.

1168. (*Mr. Wilson.*) I understood you to say, generally, that you thought it quite harmless, as harmless as unlighted straw, I think was your expression?—I mean to say, as far as I am personally concerned. I do not understand how opium smoking can be injurious. I believe the statement is made that the Chinese are injured by it. This is to me a very interesting puzzle, and I would like to have it cleared up; and it would be a great thing to this end to have analyses made of the *chandu* smoked in different parts of the East.

1169. Yes, that may be very interesting as regards yourself, but we are speaking about the people of India and China. You do not, I suppose, suggest that it produces no more effect upon them than an unlighted straw?—Well, I do not know anything about the Chinese; but here I have Spence's evidence, and Scott's, and Ayres'. Ayres says: "As a habit I cannot find it so injurious as tobacco smoking is in some cases. I am an inveterate tobacco smoker myself, and as far as I am concerned, it has never done me any harm, but I have seen many cases of its evil effects on other people. I have not been able to find even this much in the case of the opium smoker." This is written by a man who has been in charge of the hospitals and jails of Hong Kong, for, I believe, 20 years. "Very few people have got through their first pipe or cigar without feeling very sick, even if they have not had a violent attack of vomiting; but I have tried opium smoking on many novices, and could find nothing approaching the effect of tobacco; though the smoker does not inhale the smoke of tobacco, the effect of the nicotine in the case of a novice is visible to anyone. But though the opium smoke is always inhaled deep into the lungs, no effects of morphia are visible at all, and I doubt very much if this principle ever reaches the lungs at all. As will be seen in Mr. McCallum's report, there is about 6 to 7 per cent. of morphia in the opium sent out by the opium farmer, yet the old opium smoker, who has had the habit for over 30 years, and was one of the best Chinese Government servants in my department, could not detect the difference between the opium farmer's opium, containing 7 per cent. of morphia, the same opium with an additional 15 per cent. of morphia added, and the opium farmer's opium with all the morphia abstracted." Now I only saw that to-day; but it exactly confirms my suspicion that the morphia is decomposed before the smoke enters the lungs, or is to a great extent decomposed.

1170. I only wanted to be sure if I had properly condensed the general effect of your evidence—that opium smoking is harmless. You do not go so far as to say that it is beneficial, but you say it is harmless?—Yes, that is what I say. I would add that opium smoking in Bombay is only indulged in by riff-raff Chinese and others—who come from abroad, at least that was my personal experience there. In my time there was only one opium smoking shop there—since then the number may have increased—and it was only the lowest of the people who used it for opium smoking.

1171. I only want to ask you one other question. You spoke of the good conduct of native troops on the march. It is a fact, I believe, that opium smoking shops have to be shut up whenever a regiment passes. Do you know why that is?—I do not know how that may be. I know nothing about the licensing system in India—it is a matter in which I take no interest. I speak as a sociologist and a medical man.

1172. But you spoke about the contrast between the British troops and the native troops?—Yes, the contrast presented on the line of march respectively by spirit drinking and opium eating habits. The British troops were a source of all sorts of anxiety and trouble

to their officers; whereas the native troops on the march were never a source of any anxiety whatever.

1173. You do not know anything about those opium shops being shut when the regiments were passing through?—Not up-country. I never heard of such a regulation.

1174. (*Mr. Mowbray.*) Do your remarks apply equally to opium eating as to opium smoking?—Oh, no, I draw a distinction between the two. I was only speaking of opium smoking when I said the opium habit was, in my experience, absolutely harmless. Opium eating, of course, one can easily understand may be harmful, undoubtedly so; all I am saying in regard to it is that the opium habit in India is not nearly so harmful to the people as the alcohol habit in this country.

1175. But could you give us your opinion as to the effect on the Indian people of opium eating?—It has no bad effect within my observation. The healthiest people I knew, the best people, the wholesomest people, and those you trusted most in their work, were always the opium eaters: invariably.

1176. But you consider that eating opium is a stronger form of taking the drug than smoking it?—Quite so, because of the morphia it contains. Nothing can be more hurtful, for instance, than the morphia habit now so prevalent in America. Of course, in speaking of the effects of a drug or any substance, one must remember that the least difference in composition, or even in structure, makes the greatest differences in its physiological action. For instance, water, crystallised as snow, instead of allaying thirst aggravates it.

1177. But your general opinion is that in neither form does it do any harm?—Well, I will tell you what my opinion is: I would like everybody to lead an ideal life, to live upon the fruits of the earth, and to take no stimulants whatever but water and milk; but taking human nature as it is, I would not for the world disturb the opium habit of the Indian people, because I know that if they ceased to use opium our merchants would pour alcohol into the country in its place. Our distillers would be quick to see their new market, and would rush and make it all their own; and you would not dare to prevent them; and, in times of epidemic or famine, alcohol would decimate the people of India before you were aware of it.

1178. (*Sir W. Roberts.*) Referring to that singular observation of yours about the opium pipe, I daresay you have seen it stated that, even with regard to the nicotine of tobacco, which is volatile at a high temperature, it is not nicotine which reaches the lungs, but two allied alkaloids derived from it?—Yes, formed in transit. That is a very interesting scientific point, and with reference to opium can be determined only by an analysis of the smokeable extract, or *chandu*.

1179. (*Mr. Pease.*) You are of course aware that the policy of the Indian Government has been to keep down the consumption of opium, and still to endeavour to maintain the revenue?—I think the Indian Government has acted very weakly, with criminal weakness, in yielding to the pressure put upon them by the Anti-Opium Society through Parliament. I have no right to criticise them, but I utterly disapprove of their want of conviction, or it may be of courage in this respect.

1180. Indeed, I believe you have expressed the opinion that you would personally approve of the opium trade being thrown open to private enterprise?—Yes.

1181. I suppose you are aware that witnesses have stated that opium eating is a very deteriorating vice, and shows marked effects on the consumer?—That may be so in China, but within my own personal observation most assuredly that is not the case, and as I have said, I believe there is no European who knows all classes of the natives in India more intimately than I do.

1182. (*Chairman.*) To sum it all up, as regards the effect of the use of opium, I presume it is like other things a question of quantity, and you hold that the moderate use is not injurious, indeed I think you say it is beneficial; but that an excessive use of it will have a pernicious effect?—It may be so, but I have never seen any pernicious effect from the habitual use of opium in any form. We have most of us seen how rapidly the use of alcohol leads to its abuse, but I never in India knew any case in which the habitual use of opium had proved injurious.

The witness withdrew.

Mr. H. N. LAY, C.B., called in and examined.

1183. (*Chairman.*) You were for many years resident in China, were you not?—Yes.

1184. How many years were you there?—Seventeen.

1185. And during that time what posts did you fill?—I entered the Consular service as supernumerary interpreter. I was for some time attached to the Magistracy at Hong Kong as interpreter in the Cantonese dialect; I then became an assistant in the Consulate at Canton; and afterwards interpreter and vice-consul at Shanghai. I was then appointed British Inspector of Customs in succession to Mr. (now Sir Thomas) Wade, and in 1858 I was attached to Lord Elgin's Mission, and by Lord Elgin's express wish became Inspector-General of Chinese Customs.

1186. How many years were you in the service of the Chinese Government?—Nine years. I was in intimate relations with the highest officials of the Empire at a time when they were in great distress and difficulty, and when they did not know what to do; I was in fact really their adviser.

1187. Well, you have had many opportunities of forming an opinion with regard to the question which is before us?—Yes, my Lord, I think I have.

1188. Sir James Lyall has kindly undertaken to conduct your examination.

1189. (*Sir J. Lyall.*) You have written a note, Mr. Lay, entitled "Note on the Opium Question, and Brief Survey of our Relations with China." So long ago as 1589, and again in 1615, opium appears in Chinese tariffs as an article paying import duty?—Yes.

1190. Have you seen those papers (the tariffs), or on what authority have you made that statement?—Yes, I have seen the tariffs, and the very use of the word "opium" (which in Chinese is called "a foo young," derived from the Arabic word U-fyun) proves that we did not introduce opium into China, but that the Turks did so in the first instance. Opium was introduced into China in the eighth or ninth century from Persia, Syria, and Turkey, under the term "afuyung," which was corrupted into "opium."

1191. I think Indian opium was first introduced by the Portuguese, was it not?—I believe it was.

1192. I see you say in your note, also, that in 1722 an import duty on opium was fixed by Imperial Decree?—Yes.

1193. On what authority is that statement made?—The authority is the Blue Book, where it is distinctly stated, and further on in my note I think I can quote you a passage where the fact is recorded.

1194. Again you say that this duty continued to be collected from that time, and that the import of opium was first prohibited by Imperial Decree in 1799?—Yes; but it was carried on just as before, notwithstanding the decree.

1195. Have you seen that decree of 1799?—No, I have not. I have seen the tariff of 1722, in which the article is admitted as an import, and a duty is fixed of three taels (or 1*l.* sterling) per picul (133½ lbs), but I have not seen the decree of 1799.

1196. You further say in your note that the motive of the decree of prohibition in 1799 was in consequence of the drain of silver from the country. On what authority is that?—That is also to be found in the Blue Books.

1197. Yes, but how did you ascertain that it was in order to prevent the drain of silver from the country, and not on moral grounds, that the decree was passed?—Because it omits any reference to moral grounds.

1198. What, the decree?—Yes, the decree does not contain any reference to moral grounds.

1199. I thought you said you had not seen the decree?—I have seen the reference to it in the Blue Book. I have seen all the Blue Books on the subject. I get my information here mainly from the Blue Books.

1200. The old Blue Books?—Yes, between 1809 and 1840.

1201. A Blue Book, probably, would not mention any moral ground, would it, upon which the Government of China might have acted?—No, but it would quote the decree—portions of it, at all events, or possibly the whole of it. I have not the books here.

1202. You say that after the decree of 1799, and down to the events preceding the war of 1840-41, the opium trade was allowed to continue, as before, by the Chinese governors and mandarins, and that no article paid its import fees more regularly than opium did?—Those are the words of Captain Elliott.

1203. Do you understand by the word "fees" that the Imperial duty fixed in 1722 continued to be levied, or that the mandarins exacted other fees, such, for instance, as transit duties?—I think they always, from the first, exacted more than the legitimate fees.

1204. Do I understand that, in spite of the prohibition of 1799, the Imperial duty fixed in 1722 continued to be collected?—I have no doubt of it myself, but I have, of course, no evidence that such was the case; but if you will refer, sir, to my note dealing with the year 1725, you will find that "the first Customs tariff for foreign trade was proclaimed. Yung Ching, the reigning Emperor, directed it to be strictly observed by the local authorities. Those directions were disregarded. Arbitrary and excessive charges were imposed by the authorities, who, moreover, sought to obtain heavy bribes by the arrest and imprisonment of merchants, and the vexatious detention of shipping."

1205. If the import trade in opium continued, unaffected by the prohibition, and fees or duties were levied quite regularly, how do you account for the coming up of the smuggling trade which you mention sprang up?—Well, the term "smuggling trade" is really, as we understand it, a misnomer. There never was any opium smuggled into Canton at all, the smuggling took place upon the Canton River, between Lintin and Canton, after the admission of the opium.

1206. Well, was the port at Lintin then?—No, the port was at Canton.

1207. Is Lintin above Canton?—No, some distance from Canton. The river is 90 miles long.

1208. Is it, I mean, below Canton or above it?—Below Canton. My note on this part of the subject says: "In consequence of the exactions levied upon opium after its admission, a smuggling trade had sprung up at points upon the Canton River, which is nearly 90 miles in length. Upon the Viceroy's recommendation a decree was issued from Peking in 1834, enacting the severest penalties for its repression. Thus we have the importation of opium expressly recognised by the Imperial Government no less than 35 years after the interdictory decree of 1799."

1209. I do not quite understand, and I should like you to explain, if you can, why, if opium continued to be quietly imported as before, and duties or fees paid on it, there should be any smuggling trade. What kind of smuggling trade was it; what was the object of the smuggling trade?—The object was to avoid the excessive charges put upon opium by the authorities. They added very much more than 1*l.* per picul—perhaps multiplied the duty a hundred times, or a thousand times. It thus became a constant struggle to get the opium into Canton from Lintin, free of these excessive charges.

1210. Get it into Canton, or into the country generally?—Get it into Canton; it all went to Canton.

1211. The difficulty was to get it into Canton without paying the "squeeze"?—Without paying the "squeeze" to the local officials.

1212. The "squeezes" were all paid outside Canton?—Within the limits of the port, but some distance from Canton.

1213. And this smuggling trade was carried on by Chinese, and I understand also by English, or other foreigners?—Principally by Chinese, but of course there may have been here and there a European watching his own opium. Everyone would cheerfully have paid a small, moderate fee of 1*l.* sterling per picul, or 133½ lbs. Anyone would have paid that without demur, but excessive charges were imposed. The Emperor instructs the authorities to get these charges. As Captain Elliott observes, the officials at Peking and the officials at Canton divided the profits, and the decree in question was a positive recognition of the trade.

1214. This river smuggling greatly promoted piracy—that is, river piracy—piracy of other kinds too, I suppose?—I should doubt it. There was no inducement to piracy so far as foreigners went, and I never

Mr.
H. N. Lay,
C.B.

14 Sept. 1893.

Mr.
H. N. Lay,
C.B.

14 Sept. 1893.

heard of any of our people being engaged in piracy at all, there was no motive whatever for it.

1215. I suppose a lot of armed boats fighting with the mandarins and police of the country, and perhaps very often successfully fighting with them, was very likely to lead to a kind of piracy, was it not?—It is not recorded, even in the "Middle Kingdom," a book by which all the anti-opiumists have been utterly misled. This book was written by an American. The Americans of that day were very hostile to us, and we were not as wise then as we are now, and did not attach the same value to a friendly feeling between the two peoples; and this book, from which the anti-opiumists derive all, or the greater part, of their arguments, is full of contradictions and mis-statements. It does not give a true account at all. This note is from the official documents on record, without omitting any.

1216. You say in the note, I see, that in 1830 the cultivation of the poppy was already widespread?—Yes.

1217. "Half the province of Che-kiang was covered with the poppy, which was also extensively grown in the provinces of Kwei-chow and Yun-nan." But that is rather contrary to some of the evidence which we heard yesterday and the day before from some of the Chinese missionaries—contrary to their impressions. I should like to know what is your authority for those statements?—The authority is the Blue Books; you will find it in the Blue Books between 1809 and 1840.

1218. (Chairman.) Of course the conditions might be different to-day from what they were at that time?—The conditions are very largely different to-day; but they had begun to grow opium years before—I believe concurrently with the early introduction of opium into China. This is admitted again and again by Chinese officials.

1219. (Sir J. Lyall.) I suppose Cheh-kiang is a province quite close to the sea, is it not?—Yes.

1220. I suppose if the province of Cheh-kiang was growing opium in 1830, and it was not doing so at a subsequent time, it must have been repressed by some Government order?—I do not think so. The Chinese Government have nominally repressed the cultivation of opium, but practically they have allowed it to go on. I shall submit evidence to you presently that it is now cultivated in every province in the Empire, and was cultivated in every province so long ago as 1864. I visited Peking for the last time in 1869, and saw poppy-fields in flower right up to the wall of the city.

1221. In the Tai-ping Rebellion did not the rebels attempt the suppression of the opium cultivation; they stamped it out for a time, did they not?—No, they never had sufficient mastery of the country. The Chinese Government, at the time of the Tai-ping Rebellion, tried to put down opium cultivation, in order that they might get a large importation of Indian opium, because, whereas Indian opium paid (since our treaty at all events) 30 taels per picul, native opium paid much less because it was so easily smuggled; it was not like millet, grain, or rice, but being portable in small parcels, the Customs barriers could easily be evaded.

1222. Has it not been stated that the policy of the rebels was to put down opium cultivation?—Well, I saw a good deal of the rebels, and I never heard any of them put that forward. There are a good many arguments put into the mouths of the rebels, and of the officials, which were never employed. You asked me just now, sir, about the Imperial duty fixed on opium in 1722. At page 4 of my note, September 7, 1836, you will find it stated that: "In the reigns of Yung Ching and K'ienlung (1722 to 1736) it was included in the 'tariff of maritime duties, under the head of 'medicinal drugs,' and there was then no regulation against purchasing it or inhaling it."

1223. The general purport of your note seems to be that the Chinese Government declared war first in 1839, and forced on the war?—Certainly. The war has been misnamed an "opium war"—altogether misnamed. The war arose out of the hostilities of Lin, commenced four months after his demands had been met, and continued for five months when he declared war. He seized the opium in March 1839; it was not till April 1840 that Lord Palmerston took action.

1224. You quote in your note something which Captain Elliott said to the effect that the foreign smugglers were becoming so desperate and lawless as to force the Chinese Government to take some strong action?—Where is that?

1225. I read it just now somewhere in your paper, quoting Captain Elliott, I think?—Yes, sir, I have it. It is at page 5: "The manner of the rash course of 'traffic' (meaning the opium trade on the river, sir, as I said, not the forced introduction of the article from abroad) 'within the river had probably contributed most of all to impress on the Chinese Government 'the urgent necessity of suppressing the growing 'audacity of the foreign smugglers, and preventing 'their associating themselves with the desperate and 'lawless of their own city. It was the opium trade 'within the Bocca Tigris, not the mere existence of 'the trade, which had exasperated the Peking Government.' The fees which were levied on opium were very large indeed. Opium was extremely valuable, and they mulcted it to an extraordinary extent in those days. The authorities used to charge it *ad libitum*. In 1837 (at page 5, second paragraph) the Chinese Government determined to legalise opium of their own accord."

1226. That was in what year?—1837. Opium was legalised throughout the year 1837.

1227. What was Lord Palmerston's attitude in 1838 to 1840 with regard to the prohibition of the opium trade?—At the end of 1837 the Chinese Government again altered their policy. They had been wavering for a long time between forbidding the import of opium and interdicting the export of the precious metals. They were actuated purely by fiscal considerations, not by any moral sentiments. Opium further served as a handy weapon against the foreigner, whom they hated; but, if you look at all the despatches, the real point is the interdiction of the export of silver. They would have continued to let opium in but for the drain of the Sycee silver. Captain Elliott informed Lord Palmerston that at last the Chinese Government had made up their minds to re-enact the prohibition against opium, and upon the receipt of that information Lord Palmerston on June 15, 1838, wrote: "Her Majesty's Government cannot interfere for the purpose of enabling British subjects to violate the laws of the country in which they trade. Any loss, therefore, which such persons suffer in consequence of the more effectual execution of the Chinese laws on this subject must be borne by the parties who have brought that loss on themselves by their own acts." Upon this I say in my note: "This despatch, standing alone, refutes the charge made that England has forced opium on China. The moment Chinese prohibition is announced, instructions are issued to respect it." And those instructions were implicitly obeyed by Captain Elliott throughout.

1228. Then what was the reason that the war actually did break out, if it was not upon the opium question?—"The Special Commissioner, Lin" (I am reading from page 6 of my note), "arrived to carry out the change of policy. Ignoring her Majesty's Minister, Lin addressed the foreign merchants at Canton direct, requiring them to surrender 'every particle of opium on board their 'storeships.'" He laid hands upon Captain Elliott, who was Her Majesty's Minister, he barricaded the factories, took away all servants, and cut off provisions. That was on March 15th, 1839, and within 14 days Captain Elliott had surrendered all that we had, and the transaction was closed. Lin violated his promise that when the opium was given up permits for ships and subjects should be given. Captain Elliott gave up the opium on March 28th. On that date he "sends Lin delivery order for 20,283 chests of opium, and asks to be set at liberty according to promise. Lin replies same day, declining to accede to his request." Captain Elliott was detained a prisoner for seven weeks. On April 6th Captain Elliott tells Lord Palmerston: "The late frequent changes of policy of the Government in relation to this trade left it a matter of perfect doubt to the very day before the Commissioner's first edict appeared, whether the avowed purposes were to be depended upon or not, or whether the object was merely the extensive check of the trade by subjecting it to heightened temporary inconvenience, and exacting some considerable fees as the price of its future relaxation." He mentions 'the great impulse it had so lately received by the public preparations of the Imperial Government to legalise it,' and adds: 'Up to a very late date, my Lord, no portion of this trade to China has so regularly paid its fees to the officers of this and the neighbouring provinces, high and low, as that of opium; and under all the circumstances I am warranted in describing the late measures to be those of public robbery, and of wanton violence on the

"Queen's officers and subjects." "The utmost conceivable encouragement, direct and indirect, upon the one hand, and sudden violent spoliation on the other, are the characteristics of the Chinese measures concerning opium."

1229. Well, I mean to say, what was the actual cause of war, if Lord Palmerston was determined not to support the opium business. Was it because the merchants were imprisoned, or was there anything else?—No. The opium had been surrendered in March, and Captain Elliott had been released in May. On June 21st, Captain Elliott addressed a letter of remonstrance to Lin for his breaches of faith, which Lin answered by organising a force to drive Captain Elliott out of the Portuguese settlement of Macao, whither he had retired. Lin directed Captain Elliott's expulsion, and a second time cut off his supplies and withdrew his native servants. (In those days the Chinese officials had much more power over the natives than they have now, at all events in the place where Captain Elliott then was.) In the meantime Captain Elliott kept writing to Lin entreating him to enter into friendly relations with him, but Lin declined, and having threatened Macao at the head of 2,000 men, compelled Captain Elliott's retirement to Hong-Kong, whence he wrote, September 24, to Lin, detailing elaborate recommendations for the prevention of the introduction of opium into China, and offering his assistance to effect that object. He says: "All opium has been delivered up, all vessels engaged in the trade have been required to depart. The flag of his country does not fly in the protection of a traffic declared to be unlawful by the great Emperor, and therefore, whenever Chinese officers desire to examine all or every particular ship or vessel suspected to have opium on board, Elliott will take care that they are accompanied by officers of his establishment, and if after strict search any be found, assuredly Elliott will not presume to offer the least objection, though the whole cargo be immediately seized and confiscated. . . . He will not oppose expulsion from the country of offending merchants." He proposes that no English firm shall in future be permitted to transact business, or to reside in China, till Elliott shall have forwarded to the high officers a plain declaration signed by each member thereof, and countersigned and sealed by officers of the English nation, setting forth their solemn determination to have no concern, direct or indirect, with the opium traffic, neither to permit or knowingly sanction any persons under their control to have any, and further, their full knowledge of the new regulation" (you observe, it is "the new regulation") "that they will be forthwith expelled from the Empire if it shall be proved to the satisfaction of Chinese and English officials that they have broken faith in the least degree Every vessel arriving shall make solemn declaration that she has no opium on board, otherwise she shall not be permitted to trade, &c."

1230. Then Lin refused that, and declared all trade closed, did he not?—Yes; that was in December. He ignored that proposition altogether. On October 9th, Captain Elliott again appeals to Lin that British subjects may be allowed to return to Macao; in reply to which he issued orders to attack some of our ships.

1231. What was Lin's object in refusing Captain Elliott's overtures?—Hatred of the barbarian.

1232. He wanted to expel us altogether?—He wanted to expel us altogether. The moment you prostrate yourself before a Chinese, his answer is the knife. It is no use whatever giving way to them; you must insist on an equal and a proper footing with them, and the moment you depart from that attitude they become aggressive and overbearing.

1233. I see that after this war of 1840-41, in the Treaty of Nankin, opium was not mentioned?—No, sir; there is no mention of it in either of our treaties of 1842-3 or tariff of 1843. I should say that in reply to Lin's communication to British merchants, calling upon them to deliver up the opium, they said: "If you do not wish to have it, we will pledge ourselves not to bring in any opium in future." That was on the 25th March 1839.

1234. 1839, just before the war?—Long before the war—12 months. War was not declared by us till April 1840.

1235. I suppose one reason why the Chinese preferred not to have opium mentioned in the treaty was that it

was understood among the Chinese people that the war arose about opium?—No; I think not at all.

1236. You think not?—Not at all. They had broken faith with Sir Henry Pottinger in the first instance, and been guilty of great treachery. When he introduced the subject of opium the Chinese Commissioners professed their disinclination to enter upon the subject; they were perfectly indifferent to the importation of opium. That is proved by the fact that in the following year, 1844, they entered into a treaty with the United States Government, who fancying it would please them, added a clause making opium contraband. The Chinese never gave effect to the stipulation, though the Americans were as great importers of opium as we were.

1237. Does not the fact that the Americans entered into that undertaking seem to show that they thought it would be gratifying to the Chinese?—Yes; the surmise was that it would be—it was intended as a slap in the face for the English.

1238. Do you think that if the Chinese Government had considered, at the Treaty of Nankin, that they could safely, and without danger of getting into further quarrels, and possibly war; with ourselves, have prohibited the import of opium, they would not have done it?—No; I think they were utterly indifferent; they did not care one jot about it.

1239. You think they cared about the loss of their "squeezes" and duties on the opium smuggled up the river, but they did not care about the prohibition of the import of opium?—Yes. That Lord Palmerston was inspired by the most friendly intentions towards China is proved by the precise instructions he gave Lord Napier in 1834, as is confessed in this book, "The Middle Kingdom" (Vol. II., p. 470): "You will adopt no proceedings but such as may have a general tendency to convince the Chinese authorities of the sincere desire of the King to cultivate the most friendly relations with the Emperor of China, and to join with him in any measures likely to promote the happiness and prosperity of their respective subjects." If, therefore, the Canton authorities had met Lord Napier in a proper way, if they had ever spoken a word against opium, their representations would have received immediate attention, there is no doubt. During the whole time of my official connexion with China I never heard any Chinese official or otherwise complain of our action in regard to opium. Of course if you go to a Chinese—it takes a man seven or ten years to acquire the language sufficiently to be able to get at or near the mind of a Chinese—if you say to him, "Opium is a dreadful thing," he will say, "Oh, yes, opium is a dreadful thing." But if you say to him, "Why, you grew it years and years before we imported it; you have been growing it for 200 years," he will, it is safe to say, answer, "Oh, it is all fudge about opium being a dreadful thing; these people like to ask us that question and get the answer suited to their own views, and to please them we give it."

1240. I think that is a common characteristic of all Oriental peoples?—Yes, with all Orientals. It requires some skill to know what is really in their minds.

1241. I understand that after the war and after the Treaty of Nankin the trade in opium continued quite quietly down to the beginning of the next war, the time of the seizure of the "Arrow"?—Yes, till the seizure of the "Arrow." But first there is a passage which I would like to read from, "The Middle Kingdom," which confirms what I have been saying. It is in Vol II., p. 500: "No one was more desirous of putting a stop to this destructive traffic than Captain Elliott, but knowing the impossibility of checking it by laws he naturally wished to see the many political and commercial evils growing out of smuggling done away. It was, indeed, much to be desired, that the Chinese would take this course; and it is very remarkable that the great reason why the Emperor and his advisers did not do so was because it would be detrimental to the people." The Chinese are thus avouched to have acted with open eyes and without constraint. The amount of fairness which this book deals out to us is illustrated by its perverse animadversion upon Lord Palmerston who, the moment he heard that the Chinese Government wished to stop opium, issued positive instructions, which Captain Elliott carried out.

Mr.
H. N. Lay,
C.B.

14 Sept. 1893.

Mr.
H. N. Lay,
C.B.
14 Sept. 1893.

1242. That is going back to the old war?—At page 502, Lord Palmerston's despatch of June 15th, 1838, is instanced as "a most paradoxical but convenient position for this 'honourable' officer of the English Government to assume!" An utterly prejudiced comment, I submit.

1243. Then what was the cause of the second war?—The cause of the second war was the question of the seizure of the "Arrow." It had no relation to opium at all. One of the man-of-war brigs had left a few days before. The "Arrow" carried the British flag, as she was entitled to do. After she had been lying there for eight days—

1244. I do not think we need go into that?—Very well, sir. She had nothing whatever to do with opium; she was not an opium ship, nor was she carrying a pound of opium. No apology could be obtained from the Viceroy by our Consul, and the matter was put into the hands of the Admiral, Sir Michael Seymour. Hostilities then ensued, into the details of which I need not, perhaps, enter.

1245. Opium, then, was formally recognised in the tariff that was drawn up after that war?—Yes. Lord Elgin went up to the north, and at Tientsin a treaty was concluded. The word opium was never mentioned at Tientsin upon our side or upon the Chinese side, although at that very time the American Minister was, as he told us afterwards, at Shanghai, offering the armed assistance of the United States to put down the traffic. The United States adopted that line, as they did a similar course when they made opium contraband by treaty in 1844, to curry favour with the Chinese. But what was the result? The omission in the new treaty of the provision of the treaty of 1844! In our treaty, the 26th and 27th articles, it was agreed that the tariff should be revised, and that an officer of the Board of Revenue should be deputed on behalf of the Chinese Government to meet officers deputed on behalf of the British Government. The only remark I would make here is this: An officer of the Board of Revenue! If our motive had been to force opium on China we should have dealt with the Imperial Commissioners themselves; but this fact proves that we had no such intention—that all we cared for was to have someone (any official they pleased) sent down to Shanghai to consider the tariff with us.

1246. Lord Elgin's instructions, I suppose, were that you were not to raise the question of opium?—He never gave me any such instructions, and throughout the whole course of my connexion with the treaty negotiations opium was never mentioned.

1247. But in drawing up the tariff you must have thought of opium—such an article as opium could not have been altogether absent from your mind?—Yes, but that was five months after the conclusion of the treaty. The treaty was signed at Tientsin on June 26th, the tariff was considered at Shanghai five months later, when the forces were all withdrawn.

1248. Yes, quite so; what I meant was that with regard to the tariff it would have been impossible to have overlooked the subject of opium at Shanghai?—Yes. The 27th article of our treaty reads: "it is agreed that either of the high contracting parties to this treaty may demand a further revision of the tariff, and of the commercial articles of this treaty, at the end of 10 years; but if no demand be made on either side within six months after the end of the first ten years then the tariff shall remain in force for ten years more, reckoned from the end of the preceding ten years; and so it shall be at the end of each successive ten years." Now, the point of that is that our treaty having been made in 1858, the Chinese were entitled to revision of the tariff in 1868, 1878, and 1888. Why did they not ask for it?

1249. Well, I see you say they did not raise any question about opium, but I think I have seen somewhere that at an interview with Sir Rutherford Alcock that question was brought forward, and that rather a moving appeal, as he said, was made by the Chinese Commissioners on the subject of omitting opium from the tariff schedule, to prohibit altogether its import?—They made no appeal whatever in 1858. In 1868 they sent Mr. Burlingame (the United States Minister at Peking) home to this country as the chosen exponent of their views and sentiments, and he never mentioned opium at all. In the following year we find Sir Rutherford Alcock suggesting, I suppose, to the Chinese Ministers to address him on the subject, the result of which was that he undertook, I believe, a

self-imposed mission to the Government of India on the subject. That was in July 1869; they wrote a letter to Sir Rutherford Alcock, in which they say—

1250. (*Mr. Pease.*) Who are "they" who write?—The Chinese Ministers—the members of the Foreign Board, Prince Kung and others. There are a number of them. "The writers hope that his Excellency will memorialise his Government to give orders in India and elsewhere to substitute the cultivation of cereals or cotton. Day and night, therefore, the writers give to this matter most earnest thought, and overpowering is the distress and anxiety it occasions them." But the distress and anxiety notwithstanding, within three months they sign a Convention (which I hand in) with Sir Rutherford Alcock, under which they obtain an increase of the tariff duty on opium equal to 60 per cent., showing the reality of the Chinese objections.

1251. (*Sir J. Lyall.*) Well, but from Sir Rutherford Alcock's account I understand that the British Commissioners as it were received this in a way which showed that they did not at all like the proposal?—Which Commissioners?

1252. The Englishmen who were meeting the Chinese Commissioners. When this proposal was put forward by the Chinese Commissioners they were silent, and showed that they did not like it?—There could have been no reality on the part of the Chinese in penning such a letter, when three months afterwards the duty was increased 66 per cent.

1253. It shows that they were not very earnest, but it shows that if they could not get one thing they would take the other, does it not?—It was all fustian, their objection was manufactured to meet a supposed invitation for it. The treaty concluded with the United States, 11 years before this date, attests incontrovertibly the real views of the Chinese Government. The United States Minister offered armed assistance to stop the import of opium. What was the Chinese reply? To deliberately omit from the Treaty of 1858 the provision of the Treaty of 1844, which had declared opium contraband.

1254. Another thing a good many witnesses who have appeared before us have said is that at that very time the Chinese Commissioners hinted broadly that if that was not done (that is, if the British Government did not join with them in putting down the Indian opium,) the Chinese Government would be driven to a policy of withdrawing all the restrictions from the growth of the poppy and the manufacture of opium in China, in order to kill out the import there and then deal with the other trade with a free hand. Do you think that that is correct?—No, I think that is an utterly untrue assertion. There is no evidence whatever to support it. In 1864 (that is eight years after the treaty of 1858) we have the Inspector-General, my successor, addressing the Commissioners at the several ports and asking them as to the growth of the native drug.

1255. Which year is that?—1864, five years before the date under consideration. It was grown, you will find from the return made to him in that year, in every one of the provinces. In my note I say it was grown, in 1858, in 16 out of the 18 provinces. That was due to no interposition on our part; we had no voice in the matter at all. I will lay that return before the Commission if you please. I should like, were I to be allowed, to comment on one of the documents in the "Friend of China." I think it is a good sample of the sort of evidence presented by them.

1256. Whom do you mean by "they"?—The Anti-Opium Society. They have continually assailed us; they have been reckless in their mis-statements with regard to our action on the opium question. There were no men of higher character than Sir Henry Pottinger or Mr. John Robert Morrison. Then there was Lord Elgin, and as to the subordinates under him, not one had any wish whatever to support opium; and the anti-opiumists have no right to use language like the following, which I offer as an illustration of the kind of statements they make: "The foulest stain upon our Imperial history is the way in which, at the point of the bayonet and at the mouth of the cannon, we have forced the Indian poison upon the unhappy Chinese. No words are strong enough to describe the cowardice and diabolical cruelty of our wars with China." This language is as disgracefully unjust as it is utterly false.

1257. (*Mr. Pease.*) Where is that statement made, may I ask?—It is in the "Methodist Times," written,

I suppose, by Mr. Hugh Price Hughes, who seems to have taken up the championship of the anti-opiumists for the last four or five years.

1258. (*Sir J. Lyall.*) Is there anything more you wish to say as to the history of opium in China? We have now brought it down to the attempt to revise the treaty in 1868?—I may observe that when Mr. Burlingame came to England in 1868, it is a very singular thing that, if the Chinese had felt this strong pressure alleged to have been exercised by us in the matter of opium, they did not charge Mr. Burlingame to complain to Lord Clarendon. Mr. Burlingame was silent on the subject. He negotiated a treaty with the United States, the articles of which I lay on the table, but in that treaty there is no allusion to opium.

1259. What did Mr. Burlingame come here for?—As Chinese Minister, to represent Chinese views, and to announce that “China finds that she must come into relations with this civilisation that is pressing up around her; feeling that she does not wait, but comes out to you, and extends her hand.”

1260. The object was to fulfil the conditions of the Treaty of Tientsin, was it not?—Yes; they appealed to Lord Clarendon to give them time; but that was mere pretence. Why did not Mr. Burlingame think of opium? There is a pile of evidence to prove that we never at any time forced opium, or used the slightest pressure whatsoever with respect to it; and I should like to be cross-examined so that I might bring out the evidence I am able to produce.

1261. (*Chairman.*) I think your general statement will be sufficient. Under the Order of Reference under which the Commission is constituted we are not called upon to pronounce a judgment upon the matters which have been in issue between you and the writers to whom you have been referring; and it will be sufficient for our purpose to hear what you have said in general terms. I do not think we should go into any greater detail?—Quite so, my Lord; but is it not of the highest importance to our national credit that we should be delivered from the stigma unjustly fixed upon us?

1262. You have had the opportunity of tracing the history of these questions in the statements that you have been making to Sir James Lyall, and we accept what you have said as a statement of your views of the real course of policy which has been pursued?—There is one omission which I should like to supply. The *Le Hungchang* states, in answer to the Anti-Opium Society, “China views the whole question from a moral standpoint; England from a fiscal” (which is a downright misrepresentation). “The ruling motive with China is “to repress opium by heavy taxation everywhere; whereas with England the manifest object is to make “opium cheaper, and thus increase and stimulate the “demand in China.” They have encouraged our opium, and we, by allowing the Chinese to overtax it, have stimulated the growth of the native article enormously in every province. I think that the most short-sighted policy that ever was pursued on our part. In the Agreement of 1876 they ask Sir Thomas Wade to move his Government to agree to an arrangement the effect of which was to increase enormously the charges on Indian opium, and yet in the face of this affirm that they act from a moral standpoint while we act from a fiscal standpoint, whereas it is from a fiscal point of view alone that the Chinese Government have treated the article from first to last, as the evidence is cumulative.

1263. That is all the evidence you have to give?—That is all the evidence I am permitted to give. There is one matter I should like to produce, and that is the evidence of Mr. Selby, a missionary, who writes in the “*Methodist Times*” of the 8th June last. “He is “hopeful that if the Indian growth was forthwith “suppressed, China would be glad to carry out her “own proposal.” Where is her proposal? Has she ever addressed a proper proposal to our Government?

1264. (*Sir J. Lyall.*) You mean a proper form of proposal?—Yes; to join in putting a stop to it.

1265. May I ask what you think would be the result if we made a proposal now to China?—It has come 200 years too late.

1266. As a man of great knowledge and experience of Chinese officials, what do you think would be the result?—Nil. They would do nothing. It is grown in every province, and they would do nothing.

1267. But supposing we offered to prohibit the import of opium?—They have declared they would not

entertain it. You will see what they said in answer to Sir Thomas Wade (p. 16 of my note): “Meantime, in “1881, Sir Thomas Wade made a special application “to the members of the Chinese Government for a “declaration of their policy in regard to opium. The “Minister addressed, Sir Thomas Wade states, replied “that the question was not an easy one to “answer; he did not think that the central Government had gone so far as to formulate a policy at “all.” This so recently as 1881, after all the talk of “their having been forced to take our opium! “Speaking from a general point of view, however, he might “say that if the habit of opium smoking could be “universally and at once abolished, the Chinese “Government would be ready and willing to sacrifice “the revenue that was at present derived from opium. “All sensible men were nevertheless agreed that this “was an impossibility. The habit of opium smoking “was beyond the reach of prohibition, and the idea “was how to turn it to account; the only way in “which it could be turned to account was by making “it a source of revenue, and the revenue thus derived “was indispensable. There were, moreover, so many “other matters that needed reform before the opium “question was taken in hand, that it might safely “be said that the abolition of opium had not entered “the minds of those entrusted with the Government “of the Empire.” Sir Thomas Wade then put the “question ‘whether a gradual diminution of opium “import from India, until the trade was abolished “altogether, would meet with the approval of the “Chinese Government.’ The Minister addressed, who “again protested that the question was a difficult one “to answer, replied that in his opinion ‘such a plan “would be useless; as long as the habit existed, opium “would be procured somehow, and if it did not come “from India it would be procured elsewhere.”

1268. It is rather inconsistent with your view, is it not, that certain leading Chinese officials have appeared who have taken very strong measures indeed to stop the growth of opium?—I am not aware that they have.

1269. Did not that man who reconquered Kashgar take such measures? It has been stated so in evidence to us?—It may be so, just locally; but as a Government they have never done anything of the sort. I was in the most intimate relations with the Chinese Government, and if they had said to us, “Can you not “help us in the matter of opium?” I should have told Lord Elgin, who would doubtless have made an attempt to meet their wishes; but they never mentioned it at all. This gentleman (Mr. Selby) adds correctly: “The “grounds for that hope” (the hope that China would suppress the poppy in her own territories) “are not “satisfactory, for the Emperor has given his sanction “to the cultivation of the poppy.”

1270. (*Mr. Pease.*) You, no doubt, are acquainted with this Yellow Book of 1889: “Opium: Historical “Note, or The Poppy in China”?—I do not know, I am sure, whether I have seen it or not.

1271. There is a statement in it that the first prohibition was in 1729, and that moral grounds were assigned for the prohibition?—(*On being shown the pamphlet*) I have not seen it.

1272. This Yellow Book says, at page 35, “In the “year A.D. 1729 an edict was issued on opium smoking, “prohibiting the sale of opium.” This is Dr. Edkins’ Yellow Book, published at Shanghai in 1889?—Well, it is contradicted by this statement, in page 4 of my book, copied from the Blue Book: “In the reigns of Yung “Ching and K’ienlung (1722 to 1736) it was included “in the tariff of maritime duties, under the head of “medicinal drugs, and there was then no regulation “against purchasing or inhaling it.”

1273. It is also stated in an article by Dr. Legge, in the “*Pall Mall Gazette*” of August 16th, 1893, that the importation of the article was stopped in 1764. He says, “We find the following case in Auber’s “China,” pp. 176, 177: His Majesty’s ship “Argo” “arrived in the Canton Waters in 1764 with treasure, “and it was suspected with opium also. In consequence of the disputes which arose between the “mandarins and the captain the trade was stopped for “four months. With reference to this collision the “Court wrote for information. ‘They had been informed that opium had been shipped on her, and “other private trade, and desired a full account to “be sent home of the matter, as opium was prohibited, and the importation might be most detri-

Mr.
H. N. Lay,
C.B.

14 Sept. 1893.

“ ‘ mental to the company's interests ’ ” ?—I have never seen that article.

1274. In 1782, Mr. Fitz Hugh, a merchant of Canton, wrote remonstrating against the East India Company engaging in the smuggling trade?—No, I have not seen the letter.

1275. You have stated that various incorrect charges have been made against you by the Anti-Opium Society, and you gave one instance, which proved to be a statement not made by them at all. I do not know whether you have any others?—They have declared that we have engaged in two cruel and unjust wars in order to force opium upon the Chinese. Both secretaries of the Anti-Opium Society have stated that in the press, and Mr. Storrs Turner stated that in 1880 we were then engaged in forcing opium on China. As I was responsible under Lord Elgin for the insertion of opium in our tariff, with the voluntary assent, I may add, of the Chinese Minister, I consider that it is gross defamation of the characters of officials to advance charges so untrue.

1276. Well, we have statements made by the Chinese authorities, but those, you say, were fustian?—I did not say the documents you have just referred to were fustian.

1277. No, but the statements made by the Chinese authorities?—The pretence that we have forced opium on the Chinese is fustian, and they are only making those statements for the purpose of damaging the English. There is no solidity or substance in their complaints, and that can be proved to the hilt.

1278. The matter arises as to the credibility of statements made by different persons, and the respective value of their opinions?—No, it is a question of historic evidence entirely, and my opinion, or that of anyone else, is a matter of no moment whatever. It is the historic facts from which they cannot escape, and they must order their utterances now in accordance with those facts, which we can prove.

1279. Then there has been another suggestion made, that the Chinese Government are rather afraid to open this question, because they think that the Indian Government will not be prepared to relinquish so important a source of revenue, and that therefore, if they enter into negotiations with the idea of giving up that source of revenue they would do so with the idea of getting that recouped in some other way, which the Chinese Government would object to still more. Do you think that that is the case?—No, sir, I do not. They had an excellent opportunity of dealing with the question at Tientsin, when the American Minister made his offer of assistance. Dr. Williams, the author of the “ Middle Kingdom,” who was stubbornly anti-English and pro-Chinese in his views, was present as Chinese

Secretary to Mr. Reed, who concluded a separate Convention with the Chinese formally legalising opium, and said it had received their willing assent. Why did they not impart to their friends then that they were opposed to opium?—Why, Mr. Reed would have come to us at once. Mr. Reed was bitterly opposed to us under the influence of false impressions, and he kept us at arms' length at Tientsin; but when he came to Shanghai he became most friendly. He came to understand us and the Chinese better. There are many of our friends the missionaries who do not understand the Chinese in the least, and they go upon all sorts of rubbishy evidence which men who know the facts laugh at.

1280. (Sir W. Roberts.) I was only thinking of asking you if you have observed what are the effects of opium smoking on the Chinese, with regard to their morals and health?—Well, I think most extravagant charges are made as to that. In my first introduction to Hong-Kong I was a pupil of Dr. Gutzlaff's, who had a number of men who wished to be Christians. I should think about 250 to 300 of them, and from them my “ teachers,” as they were called, were taken. They were all opium smokers, with rare exceptions, and they did not appear to suffer at all from it when taken in moderation. I had other teachers later on; they suffered when they smoked to excess—certainly it makes a man suffer when immoderately indulged in; a powerful narcotic, taken in excess, must have a weakening effect on the system, I should say.

1281. Generally speaking, do the Chinese use opium smoking in what I may call persistent moderation?—Yes, a good many do. There is no finer race, in physique, than the Chinese. They are beating, as the Americans and Australians have found, the white people altogether. In the mid-provinces and the southern provinces there is a great deal of malaria. There a man's food consists entirely of a vegetable diet, and the ground is manured by human ordure, the odour from which is terribly offensive. The people live not in the hill country but in the low country. There is a large boat population too whose lives are spent over bilge water; but for opium as a febrifuge, they could not live. I never heard from any officials or others who smoked opium that they suffered evil effects from the habit.

1282. (Chairman.) Now, to sum it up in a sentence, I suppose you would wish it to be considered that the general purport of your evidence may be taken to be this: that in all the negotiations with which you were concerned in China, and the wars which occurred during your residence in China, it was not the object of the British Government to force the Chinese authorities against their will to receive importations of opium from India?—Quite so: emphatically so.

The witness withdrew.

Adjourned till to-morrow at 11 o'clock.

At the House of Lords, Westminster.

FIFTH DAY.

Friday, 15th September 1893.

PRESENT:

THE RIGHT HONOURABLE LORD BRASSEY, K.C.B., (CHAIRMAN, PRESIDING).

Sir JAMES B. LYALL, G.C.I.E.
Sir WILLIAM ROBERTS, M.D.
Mr. R. G. C. MOWBRAY, M.P.

Mr. ARTHUR PEASE.
Mr. H. J. WILSON, M.P.

Sir CHARLES E. BERNARD, K.C.S.I.,
Acting Secretary.

Sir THOMAS F. WADE, G.C.M.G., K.C.B., called in and examined.

1283. (Chairman.) Sir Thomas Wade, it is a matter of common knowledge that you have spent many years in China?—40 years.

1284. And during the latter portion of your service you were British Minister at Peking?—Yes.

1285. You are doubtless aware that this Commission was appointed primarily to consider the opium question as it affects India, but we have been allowed to exercise our discretion with reference to the question as it affects China, and we have thought it our duty

Mr.
H. N. Lay,
C.B.
14 Sept. 1893.

Sir
T. F. Wade,
G.C.M.G.,
K.C.B.

15 Sept. 1893.

to receive some evidence from those who are chiefly interested in the opium question as it affects China. I may say that much has been urged before us by the witnesses who have appeared before us from China, which goes to show that the excessive use of opium is a widely extending vice in China, and is doing great injury to the population. I do not know that I can convey to you better what has been put before us by the witnesses to whom I refer than by reading to you a passage from the memorial recently addressed by the Anti-Opium Association to the Earl of Kimberley. In that memorial the following passage occurs, "In China, the results to be anticipated from the stoppage of the export trade in opium from Calcutta and Bombay are thus stated in a letter received by us, 'about a year ago, from one of the most competent and experienced observers, the Rev. Griffith John, D.D., of the London Missionary Society, who has been for upwards of 35 years a missionary in the great commercial centre of Hankow.' Mr. John writes 'Let China see that we are capable of sacrificing millions of pounds annually for her good, and that of our own free will, in obedience to the dictates of conscience, and from a sense of humanity, and she will not be slow to acknowledge the worth and dignity of the act. Nay more she may begin to glorify God in us. Our intercourse with the people will become more friendly. Commerce will extend and develop, one of the greatest obstacles to the progress of Christ's kingdom in the land would be removed.' Then he proceeds to ask, 'Have the Chinese the ability to put down the vice,' and then he urges, 'As long as the Indian trade in opium exists, the hands of the Chinese Government are tied and paralysed. They can simply do nothing, but allow things to go on from bad to worse. Their best efforts, however sincere and energetic, would prove abortive. If the Indian trade in the drug were abandoned, the Chinese would, I firmly believe, make an honest effort to stop the native growth, and the event would eventuate at once in a diminution of the evil. It might eventuate ultimately in its complete suppression. But whether the Chinese Government can put down the native growth or not, our path as a Christian nation is plain enough. It is for us to wash our hands clean of the iniquity.' I have read that passage to you, Sir Thomas Wade, that you may have a general impression of the testimony which has been put before us by those who have appeared as missionaries in China and of the arguments by which their recommendations have been supported. Having heard so much on this subject, we felt that we should not be discharging our duty if we did not seek the counsel and information which we know you are so competent to give us. Can you give us a general view as to the history of the introduction of opium smoking in China, and can you give us what you know of the antiquity of the use of opium, and generally speak to us on that aspect of the question?—I should like to premise that I find myself in a very disagreeable position in relation to this question. No man who has lived the time that I have in China, and who has been in contact with Chinese of all kinds, can deny that the excessive use of opium in that country is an exceeding misfortune to that country, and I myself have stated that proposition, perhaps more positively years ago than I should be prepared to do at this moment. That is to say, that without at all pretending to abate the statement that many people,—many thousands of people—do suffer from the excessive use of opium, it is to a great number of people precisely what the use of alcoholic stimulants to people in our country, taken moderately, is; that is to say, that it will cheer the workman just as our workman is cheered by his glass of beer. You will find people who are engaged in the most intellectual employments, and people who are engaged in the very commonest employments, using opium with impunity, and using it for years with impunity; and the difficulty I refer to is this—that without being at all a dreamer, I hope being really disposed to do all that in me lies, and to see my countrymen do all that in them may lie, to abate what evil there is, the treatment of the question by the Anti-Opium Association engages me on the other side.

I think there are various contentions of the anti-opium people to be combated. And first, as regards the question which your Lordship has just put to me, that is most completely answered by the work of a most respected missionary, Dr. Edkins, who by desire of Sir Robert Hart, of whose literary staff he is a

member, prepared a historical review of the subject by collecting a number of extracts from the greater histories of China and from lesser works. From this, to make short work of it, it will be seen that the introduction of opium is not, as the anti-opiumists,—several of them,—I have heard, frequently contend it is, to be set down to our charge, but to the charge of Asiatic neighbours and Asiatic merchants. Without assuming with Dr. Edkins that they were directly beholden to the Arab and the Persian, it is incontestible that they became acquainted with the poppy—as a medicine—very early in their history; as much as, say, ten centuries ago; and as for the practice of smoking it, according to Dr. Edkins's data, this was very possibly introduced from Manilla *via* Formosa; and that, at a comparatively recent date, I will not say before our trade commenced, for I should be afraid to assign a precise date to the commencement of that trade, but certainly before our trade had at all developed itself. From early in the last century, they were beholden to their own production of opium even for a supply, which they in the opinion of the Government, or of certain Government officials, so abused as to call forth interdicts on the part of the Government, or those officials. All that you will find in Dr. Edkins's statements. But as regards the introduction of opium, we have a further corroboration of my statement that it was not introduced first by us from a source which is certainly unassailable, the testimony of the Grand Secretary Tso Tsung-tang, the Chinese official who was credited with the reconquest of the far west dominion in China, that is to say who reoccupied that country, after Yakub Khan had been poisoned. He was in the first place a furious anti-opiumist himself; he took the credit of having suppressed all poppy cultivation in the west of China; a sheer fiction; he was a furious hater of English and French, though he patronised some other foreigners in his employ. He told my German colleague, in 1881, that it was brought in by the Portuguese towards the close of the Ming dynasty; that is before the middle of the 17th century. The Ming dynasty expired in 1644. As regards our own connexion with the supply at all, I will not trouble you with a reference to the statistical tables which all those interested in it would find easy of access; but at the time that we began to send anything like thousands of chests from India, we were even then supplying so small an amount that it could not have supplied one per cent. of the population with opium if they had been all opium smokers; and further on, later, whilst I was in China, I read in a published paper by a missionary—I do not mention his name, because I am not perfectly sure that it was he—that the then—it must be between 30 and 40 years ago—that the then supply would not be sufficient for 2 per cent. of the whole Chinese population, whom we are reported to have been poisoning for all these years. Now the use of opium to the disadvantage of the population from their own supplies was noted long before our opium troubles began. You will find in the State Papers forwarded by Captain Elliot, magistrates complaining that it is in use, and one censor declaring, that it was then grown in four or five provinces. (See Blue Book 1840. Correspondence relating to China, p. 171.) I had not in my early days studied these Blue Books, as I have since, and without any knowledge of what any Chinese official authority had said to the above effect, I set to work myself, in 1847, when I was studying at Canton, to acquire information on the subject. I was aided by a young Chinaman of a most respectable family, who was much connected with trade,—no opium smoker himself, indeed a strict Roman Catholic—he obtained for me information from various mercantile friends of his, which showed that the poppy was being cultivated in no less than 10 provinces of China. Now remember that was in 1847. Our war with China, our first war, came to an end in 1842. For many years before that time we had had no access, except during the troubles contraband access, we had had no access as a trading people to any port in the empire but Canton. Now one of the quotations I had heard, and that so far back as 1842 or 1843, was a quotation of the extent and value of the opium—I mean its value as a drug, not its pecuniary value, its power,—one of the quotations was from the far north-west of China, certainly 3,000 miles from Canton, where the opium was quoted as being very nearly as good as Indian opium, very nearly as powerful. But the fact that it was then cultivated in 10 provinces is certainly worth remembering, the more so that my friend gave me—I have the paper here which I compiled from his data—

Sir
T. F. Wade,
G.C.M.G.,
K.C.B.
15 Sept. 1892.

Sir
T. F. Wade,
G.C.M.G.,
K.C.B.
15 Sept. 1893.

my friend gave me all the data for its preparation and its value in the market.

1286. Perhaps you would like to put that document in?—With great pleasure.* (*Memorandum was handed to Chairman.*) Farther, and as Captain Elliot observed, so far back as 1837 (See Blue Book 1840, p. 154. Captain Elliot to Viscount Palmerston, 2 February 1837. See also on true position of opium trade, pp. 137-138.) it was as regularly taxed in certain localities as any other import, which was brought in, in the regular native trade; and without then having seen Captain Elliot's observation above quoted, I made precisely the same remark to Lord Elgin when he first contemplated approaching the question. I think that as far as relates to our connexion with the introduction of opium you will consider that I have said enough, and as regards the native supply I do not think it would be necessary for me to add more. As regards the nature and the extent of its effects upon smokers, I also said sufficient perhaps in my preliminary remarks. I have known people of every degree, I may say, using it with impunity. I have seen most deplorable victims of it in every degree just as I have in my own country of the use of alcohol. I have seen for instance, in the Army, brother officers driven from the Service by the use of drink; and I have seen the unhappy private brought to punishment by the same cause. I have been into an opium den and I have been, on rare occasions, into a gin-palace, and the spectacles of the two are singularly alike. I do not say that the one is to excuse the other. I do not say that our having such a vice as general drinking, and the deplorable scenes that one has witnessed in the gin-palace, are in any way to excuse the other thing; but, in my opinion, experience of that sort should bar gentlemen from turning upon their own countrymen to denounce this or that particular practice, or this or that particular prosecution of a particular trade as if it was a thing exceptional and so frightful a sin that we are bound at once to make the kind of expiation for it that we did, say, for the negro traffic. And I am bound to add this, that when I find statements and arguments on the part of the anti-opiumist people, orally sometimes, sometimes in the little periodical which they publish, neither more nor less than what I must characterise as exaggerated, and when I find them putting in doubt the truth of men like myself, or other people giving testimony, I am compelled to think that a cause that requires any such propping up cannot have under it so secure a basis as these gentlemen are disposed to imagine.

1287. You have given us a very interesting sketch of this question in relation to the antiquity of the user of opium in China, and you have given us your general view as to the nature and the extent of the effect of opium smoking upon those who have indulged themselves in that habit. Does that exhaust what you wish to say in your evidence-in-chief on that subject?—I think so.

1288. Well, then, Sir Thomas, you have had, as we all know, a very intimate connexion with the negotiations which were carried on for many years between our Government and the Chinese Government with reference to this and other matters, and you were serving in China for many years at a time when our relations with China were far less friendly than they are at present; and, therefore, you are in a good position to tell us how far our wars with China were connected with the opium question. We shall be glad to hear your view on that point?—Well, it is a point which I naturally could not pass by, for I know no point upon which what I am compelled to consider exaggeration on the part of the anti-opiumist pleaders is more conspicuous. You will hear,—at least I have heard more than once on public occasions,—gentlemen talking of the first opium war, and the second opium war, and then the third opium war. The first war, unhappily, will always inevitably be described as the opium war, for the seizure of the opium by Commissioner Lin was an act which led to the disappearance from Canton of our then representative, the superintendent of trade, Captain Elliot, and of the English community. In their absence from Canton there was a collision out in the outer waters,—a collision, perhaps, in itself insignificant; for I fancy it was a drunken brawl of sailors—in which a Chinese was killed; and you had following upon that the persistence of the High Commissioner Lin in a demand for A. or B.—it did not matter which,—of six people, who were supposed to

have been present, who were indeed found to have been present on this occasion, but to not one of whom was the homicide traceable. The upshot of that certainly was a declaration of hostilities, and the result of it,—seeing that the Chinese negotiators who treated with us came forward and went backward and re-treated more than once from agreements which were supposed to have been concluded,—was that the war was prolonged, you may say, up to its termination in August, 1842, when the Treaty was signed at Nan-king. But I consider,—reading the whole of the history of our relations, say from the middle of the last century, but at all events for the period immediately preceding this which is known as the opium war,—I consider that those wars were directly traceable to the insolence and injustice of the Chinese in their,—I was going to say, relations with us, but I should more correctly say in their determination to ignore relations with us altogether. I am sorry to have to go so far into historical detail; but it must be remembered that when our Government had made up its mind to abolish the East Indian monopoly, in 1834, the Chinese were given to understand in 1831 that it was about to be abolished; and that thereupon there came from the Chinese chief authority at Canton a communication on that subject. In those days he issued edicts. His only relation with the East India Company's officials was as if they were below his servants. He issued an edict to the effect that if the British Government was going to undo the East India Company's establishment it must send someone to control British subjects who might be in China. That "someone" was sent in the person of Lord Napier, in 1834, but the local government declined to have anything to do with him—declined to recognise him as a public servant; went out of its way, in the petty Chinese fashion, (which is even yet not impossible, I am sorry to say) to belittle him by using offensive characters for his name, and in other ways to insult him. Lord Napier,—read his despatches to Lord Palmerston,—Lord Napier was ready at once to proceed to hostilities. If he had had a force he would have proceeded to hostilities. For what purpose? Not in the interests of the opium trade,—not in the interests of trade at all,—but in order to put relations on a footing which would be tolerable. He had no force to support him. He was, you may say, fairly driven out of Canton, and dying sick and broken-hearted, he was replaced, first of all by Sir John Davis, whose name must be known to everybody interested in China, and later on by Sir Charles Elliot, who for three or four years certainly strove hard if ever a man strove hard to avoid war; to avoid a quarrel. You will find throughout that period that whenever the question of opium crops up,—his word, if anything, is against it. Sir Charles Elliot, it should be remembered, was simply a species of chief magistrate,—for we had our experience to acquire,—he was chief magistrate for the Port of Canton; and to the best of his ability he did endeavour to keep down all irregularities in that port. Powers to go beyond, or force to go beyond, he certainly had not; but he strove to repress irregularities within his jurisdiction. He condescended,—for it was a condescension and nothing else,—he condescended to accept a continuance of correspondence with the chief authority in Canton, which placed him in the same position as that in which the East India Company's servants had formerly been placed. You will find that his chief, Lord Palmerston,—reputed a most belligerent Foreign Minister,—not only reprobates the trade in opium; he not only reminds Sir Charles Elliot that those who engage in it are accepting entirely their own risk; but you will even find later on that when, amongst other insults which they were then in the habit of heaping upon the community, the Chinese had brought down an opium smoker and strangled him in front of the British factories as a simple insult to that community, Lord Palmerston does not recognise it as an insult. He wishes to be "informed, whether the foreigners to whom you allude in your despatch as having resisted the intention of the Chinese authorities to put a criminal to death in the immediate front of the factories were British subjects only, or the subjects and citizens of other countries also. I also wish to know upon what alleged ground of right these persons considered themselves entitled to interfere with the arrangements made by the Chinese officers of justice for carrying into effect in a Chinese town the orders of the superior authorities." (See Viscount Palmerston to Captain Elliot, 15 April 1839. Blue Book 1840, p. 325. But see also p. 193* his Lordship's Despatch 20 September 1837 and of p. 258 Despatch of 15 June 1838.) You will by-and-bye find, my Lord,

* See Appendix VI, for this Memorandum.

Lord Palmerston holding very different language. And why? Because it was borne in upon him that the relations of the British representative with the Chinese authority were simply intolerable. But now that hostilities, one may say that war, had really begun, what was the announcement from the Throne in 1840? What was the scope of our expedition as defined by Lord John Russell? "It was to obtain reparation for the insults and injuries offered to Her Majesty's superintendent and Her Majesty's subjects by the Chinese Government; and in the second place, it was to obtain for the merchants trading in China an indemnification for the loss of their property incurred by threats of violence offered by persons under the direction of the Chinese Government; and in the last place it was to obtain a certain security that persons and property in future trade with China shall be protected from insult and injury, and that their trade and commerce be maintained upon a proper footing." You must remember that when Captain Elliot was compelled, in order to save the lives and to secure the persons of the British community at Canton, to surrender the opium, he protested throughout against the violence that was employed and the general treatment of the community. I contend that the war even of 1839,—the misunderstanding which led up to it,—would never have occurred had there been relations, even such relations as Sir Henry Pottinger subsequently obtained. We had no access whatever of an official character to the Chinese authorities at Canton. The only channel was the association of the Hong monopolists, many of them hostile to us, many of them our bankrupt debtors, having an eye to securing the monopoly of their trade, but also having an eye to that which was so dear to the Chinese mind as then informed,—having an eye to the fact that the barbarian was a barbarian and that he must be kept under control. I say that it was owing entirely to that disposition that the first war came about. There were no means of negotiation or adjustment. What was more, as Captain Elliot, (with the sincerest desire to prevent all irregularities,) complains in one of his letters to Lord Palmerston, it was vain to call it smuggling opium. And why? Because all the officials were engaged in it. Now, remember, that there is a wide difference between that position, whether of a trading community or of its official chief, and the position of people who are endeavouring to force a trade into a country *vi et armis*, as it has been alleged we did in the first war, and have been doing ever since. As I said before, the seizure of the opium is the salient incident of that war. But it is by no means the whole war, it is but an incident of it, and in support of that I quote a gentleman not likely unduly to favour England. In the year 1841, John Quincey Adams, a sufficiently well-known name, a distinguished member of a distinguished political family in America—

1289. What volume are you quoting from, Sir Thomas?—This is a missionary publication, the "Chinese Repository," which ran for 20 years in Canton, and was, at the time I speak of, edited by Dr. Elijah Bridgman, an excellent American missionary, who gives Mr. Adams's lecture *in extenso*. I shall read a short extract. There are also some notes of his, the editor's own, which I wish to read. He printed Mr. Adams's lecture in 1842, but it was delivered before the Historical Society at Massachusetts in December 1841. It is hardly necessary to quote more than a short passage of it. After tracing historically what had occurred up the year 1841, he says:—"And here I might pause:—Do I hear you inquire what is all this to the opium question or the taking of Canton? These I answer are but incidents in that movement of mind on this globe of earth of which the war between Great Britain and China is now the leading star. . . . The justice of the cause between the two parties—which has the righteous cause? You have perhaps been surprised to hear me answer Britain.—Britain has the righteous cause. But to prove it I have been obliged to show that the opium question is not the cause of the war. My demonstration is not yet complete. The cause of the war is the kotow! I do not mean to say that anybody was asked to kotow; pray let me impress that upon gentlemen who are very exacting of verbal accuracy; but that the cause of the war was the kotow, "the arrogant and insupportable pretensions of China that she will hold commercial intercourse with the rest of mankind, not upon terms of equal reciprocity, but upon the insulting and degrading forms of the relation between lord and vassal."

Dr. Bridgman, after an ample recognition of the title of a man of Mr. Adams's experience, proceeds judiciously with the following comments:—

"While, however, we differ from the lecturer with regard to the influence the opium trade has had upon the war, for it has been without doubt the great proximate cause, we mainly agree with him as to the effect that other remoter causes springing from Chinese assumption, conceit, and ignorance have also had upon it. . . . We do not see how the war could have arisen had not the opium trade been a smuggling trade. We think it would never have gone on as it has, were the Chinese better acquainted with their own and others' rights. . . ."—"Chinese Repository," Vol. XI., pp. 288-9. Dr. Bridgman cannot, of course, be expected to take so lenient a view of the opium trade as Mr. Quincey Adams; that I do not in the least wonder at. Dr. Bridgman had been resident for many years in Canton and Macao and he had had a personal experience of the evil attending the excessive use of opium which Mr. Quincey Adams could not have had. But when he urges that but for the opium the war would not have arisen, my view, I confess, is more nearly Mr. Adams's. The origin of the war lay in the fact that we had no relations. The origin of succeeding wars lay in the fact that our relations were very imperfect, and still needed perfecting. How many wars have we had with China? We had the war known as the opium war terminating in 1842. We immediately established ourselves within the walls at the different ports, but at Canton we were still not admitted into the city. It was the only place at which there was a high authority to whom the British Plenipotentiary could appeal. This was an Imperial Commissioner sent down to Canton to reside there *vis-a-vis* our Minister Plenipotentiary, who resided at Hong Kong. He was inaccessible to our Minister. We were not admitted into the city, and the promise that we should eventually be admitted was put off and put off, and a succession of outrages occurred during the five years succeeding the peace of 1842, the consequence of which was that Sir John Davis, perhaps with more zeal than discretion, in the spring of 1847, went up with a few ships of war and demanded a settlement of the city question. Kiyang, the then Imperial Commissioner engaged that it should be settled in two years. In 1849, accordingly, the two-years' term having expired, Sir George Bonham approached Kiyang's successor. The high authorities at Canton said they must refer to the Emperor. They ascertained that we were not going to strike, and then came a grand fulfilment from the Emperor and a grand approval of the attitude of the Cantonese; and we were shut out of Canton once more. Throughout those events, if there was anything to find fault with on our side, it certainly was the weakness we displayed; but as regards the charge I am endeavouring to rebut, be it remembered that not one of our grievances had anything whatever to say to opium. This decree of exclusion from the city was issued in 1849. After an interval of some few years, we established at Hong Kong,—which had of late considerably developed itself in consequence of the influx of Chinese, driven thither by their own rebellion or trouble of one form and another,—we had established a system of registering vessels of Colonial build, of Chinese make, which should run between Hong Kong and the open ports. One of these vessels, the "Arrow," had entered the Port of Canton. Allow me to say, first, that a Chinese translation of the Ordinance which was passed for the purpose of empowering the Colony to give papers to vessels of this kind had been forwarded by Sir John Bowring, then Governor of Hong Kong, and Minister Plenipotentiary, to the then High Commissioner, Yeh, months before. The whole Ordinance was forwarded to him; he was perfectly in a position, if he liked, to protest against it as an order of proceeding possibly likely to interfere with the arrangements of the Empire. He simply took no notice of it whatever; but early in October—

1290. Of what year?—Of 1856. I beg your pardon. Early in October of 1856, on the 6th of October, 1856, one of these vessels, by name the "Arrow," having gone into the Port of Canton, having been duly entered by the Consul (Mr. Parkes), had lain there for eight days. On the eighth day, the day unfortunately that Her Majesty's brig "Bittern" disappeared on a cruise from the inner waters, the Imperial Commissioner's executive pounced upon that vessel, tore down the flag, carried the people into the city, and alleging that they were pirates refused to return them. Of course this brought on a very hot discussion; and though at an

Sir
T. F. Wade,
G.C.M.G.,
K.C.B.
15 Sept., 1893.

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T. F. Wade,
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early stage of this, he ceded in part, and finally went to greater lengths, Sir John Bowring insisted upon the opening of the city as a guarantee of better relations. His plea implied or expressed was simply that we had no access to the one authority appointed by the Emperor to deal with foreign affairs. If anything occurred at one of the ports it had to be referred down to Canton through the Plenipotentiary. I may say, except a visit of ceremony on his arrival, the Plenipotentiary never had a chance of seeing this great man. Our Plenipotentiaries went up or sent up, on more occasions than one, to the mouth of the Pei-ho to communicate with Pekin to endeavour to establish a better order of things. What did the Court of Peking say? "Go back to Canton; consult the Imperial Commissioner,"—whom we could never see. That was our position; and in the usual way this led to a collision which, in the usual way, was largely misunderstood and misrepresented.

1291. It was not a war arising out of a desire to force opium upon the Chinese?—The opium had nothing earthly to do with it; no more than tobacco. But I will be candid. It is very possible that these men were precisely what the Imperial Commissioner described them as being. In the drifting population of Hong Kong, through which, at that time even, some 200,000 people came and went annually, who did not reside there,—with a coast such as is opposite Hong Kong,—you could not fail to have piracy in all directions, and at one time piracy was rife, and we were continually engaged in putting it down; because the Chinese would do nothing whatever. There is another thing I should be prepared to admit. There had been very possibly some smuggling of salt, which was and is a prohibited import. All these things may be admitted. But the great fact remains that Mr. Quincey Adams had insisted on as the cause of the first war, and which I contend was equally the cause of the second war. What was wanting was *relations*. There was no possibility of getting grievances redressed, or of coming to an understanding upon any given point. The result of that was war. Though there was no declaration of war, there were hostilities which were as like a war in character as hostilities could be; and, the result of that was Lord Elgin's mission to China, and, of course, the discrediting of Sir John Bowring. Now, it has been said that Lord Elgin received instructions from Lord Clarendon to do I do not know what with the opium question; but I have heard the statement made as part of an argument that this war, like other wars, was for the purpose of pushing trade, and particularly the opium trade. The instructions, if read at length, it will be seen, point particularly to residence at Peking; they point particularly to the improvement of relations. When they come to opium, which it would be scarcely possible to avoid coming to, with the knowledge of the extensive irregular traffic that was being carried on,—what does Lord Clarendon say?—"It will be for Your Excellency when discussing commercial arrangements with any Chinese Plenipotentiaries to ascertain whether the Government of China would revoke its prohibition of the opium trade which the high officers of the Chinese Government never practically enforce. Whether the legalisation of the trade would tend to augment that trade may be doubtful as it seems to be carried on to the full extent of the demand in China with the sanction and connivance of the local authorities. But there would be obvious advantages in placing the trade upon a legal footing by the imposition of a duty instead of its being carried on in the present irregular manner." That is the sole allusion in Lord Clarendon's instructions to Lord Elgin. I was attached to Lord Elgin from the moment that he arrived in China, in the summer of 1857, and until the spring of 1859. I may say I was almost in daily contact with him; indeed, except for two or three broken months, I was always on board the same ship with him; and it is very natural that with a person attached to him in the capacity of Chinese secretary, which was my position, he should talk very freely about everything. I can safely say that for the first eight, nine, or ten months he never referred to opium as a possible item of negotiation at all. He referred to it as a thing deplorable, from what he saw,—from what he saw in the streets; from the emaciation and wretchedness of the opium smokers he came across. He could not understand—I remember his observation on one occasion,—he could not understand how it was that such a practice should be so general and yet not universal, because while he saw very respectable people who did

not smoke at all, he saw also some who did smoke who were perfectly respectable too. But to the best of my recollection he never alluded, during the whole time that I speak of, until a date which I shall mention,—which was rather more than a year after his arrival,—he never alluded to it as a subject of negotiation. We left Shanghai for the mouth of Pei-ho in April, 1858, and after a collision we got up to Tientsin, and at Tientsin we and the French and the Americans and the Russians concluded Treaties. Mr. Reid, the American, withdrew from his Treaty a certain clause prohibitory of the opium trade which had been in the earlier American Treaty of 1845; he withdrew this clause to oblige Lord Elgin. (See Mr. Reid's letter in Blue Book, China and Japan 1857-1859, p. 394.) I forget precisely how any discussion led up to this act on his part, but as a fact he certainly did it. But a few months later in the excellent letter above referred to,—this same letter being prompted by a letter from one of the leading American merchants, also given in the Blue Book,—he urged Lord Elgin to regularise the trade, that is to say, to legalise it. And why? For the very same reason that Lord Clarendon gives:—It is an irregular trade, which everybody knows and everybody ignores; and it was upon that, more particularly, that Lord Elgin formulated his propositions regarding the legalization of the opium trade. Now, I think Mr. Lay has remarked, and it is perfectly just, that the one thing that the Chinese showed any real concern about—the one thing they felt any real concern about was the residence of a Foreign Minister in Peking. They had a most distinct objection to that; and as soon as Lord Elgin had gone away from Tientsin in July, they had set to work to undo the concession. Lord Elgin went over to Japan to make a Treaty, and was absent there two or three months; but the moment he returned to Shanghai, the two high officers who had negotiated this Treaty were sent down to Shanghai as Imperial Commissioners, ostensibly to settle tariff and trade regulations. But settlement of the tariff was a kind of work that would not have devolved on two mandarins of their position at all. It had been quite understood that the Chief Superintendent of Customs at Shanghai, who was the mandarin with whom Mr. Lay was associated as Inspector of Customs at Shanghai at the time, was to take it in hand. The coming down of these men boded something else. And what did it bode? It boded revocation of the clause that would establish a resident Minister at Peking; the one important provision, in my opinion, of the whole Treaty. As to the opium duty, when it was proposed, it would be almost a farce, to say,—it would be an abuse of words to say,—that there was any negotiation at all. There was certainly no objection raised to its insertion as a dutiable article in the tariff. This was put in the hands of two mandarins of more than ordinary position with Mr. Lay as their natural co-adjutor, he being Inspector of Customs; while, on the other part, Mr. Lawrence Oliphant, Lord Elgin's private secretary, and myself, represented the Ambassador.

1292. (Mr. Pease.) Was Mr. Lay in the Chinese service may I ask?—Yes, Mr. Lay had been Consular interpreter at Shanghai. He was then made Vice-consul, and when in 1855, after nine months, during which the Customs Inspectorate was on its trial under myself and a French and American colleague, I retired, Mr. Lay was put in my place, and for the three years following, that is up to the time of Lord Elgin's arrival, he had been in the above office. At my instance he was attached to Lord Elgin, when the mission went north from Shanghai in April 1858. I have no hesitation in saying I think—it may not be exactly relevant, not in the direct order of these proceedings,—that if it had not been for Mr. Lay's presence, for the confidence that the Chinese naturally had in him as their own employé, and for his own admirable command of the spoken language, I doubt whether Lord Elgin would have got a Treaty at all; at least not a Treaty with the provisions it contains. The mere commercial matters which the Chinese conceded, with scarcely verbal deviations to the other Powers, to the Americans and the Russians, and finally to the French, were to them a matter of indifference. What was of real importance, was what we really went to get and what that war of 1856-58 was really about; the improvement of relations with the Chinese. They hesitated, not merely on account of their pharisaical upliftedness, that affectation of precedence over all nations, which is one of their greatest misfortunes, but they hesitated, as a Chinese in my confidence informed me, because once we were alongside of them, they would not be able to get away, and

instead of making a buffer of the Imperial Commissioner at the other end of the Empire, whom a Foreign Minister was never to see, they would see us face to face, and be compelled to talk things over. This was humiliating to their pride, no doubt, but they also felt a material inconvenience in the change before them. I contend that without that change we should have been just where we had been before when the insults to Lord Napier were first offered, 20 years before; and that the one thing for which we did make war was the improvement of relations. About the means to that end there were differences of opinion. Lord Elgin was not keen, when he had seen the whole position, for the establishment of a Minister at Peking. Sir Frederick Bruce, who knew orientals both in China and elsewhere, declared that there was nothing else worth having. He said, "Our difficulty has been with these people all along the 'imperfectness of relations. What do you mean by 'relations'? How are you going to have relations perfect?" You cannot have relations perfect (he argued, quoting classical authority), unless there is a recognition of equality. And what really occasioned that war, that lasted from 1856 to 1858, was the fact that there was no equality—that there was no recognition of relations. Well, the following year, Lord Elgin's brother, Sir Frederick Bruce comes out himself, as Minister, and he finds the river blocked. He is not to go, except under impossible conditions, up to Peking. In the interim, what had happened? As I have said, these High Commissioners came down to induce Lord Elgin to revoke the concession of residence, and he did undertake to make residence conditional. He modified the provision to the effect that there should be but an annual visit to Peking, and that so long as the Chinese conducted themselves in a way satisfactory to us, we would not claim the permanent residence there. When we came up in June 1859, it appeared that the admission into Peking for the simple purpose of exchanging ratifications was so limited that it was not to be accepted without humiliation. Mind, the Chinese had a splendid opportunity of proving that we were wrong in that assumption, for we arrived at the Pei-ho with a French and with an American Minister. The French Minister's position was precisely the same as our own. But we said, "We have a right to go in, and go in we will." We did attempt to go in, and we were fired upon and beaten. The French and ourselves were thus thrown back, but the Americans, who remained there as neutrals, and against whom the fire of the forts was consequently never directed, did accept what was offered. Their Minister, Mr. Ward, was taken up to Peking; but under what conditions? Under conditions that were positively, I should say, rather worse than those with which Lord Napier had found himself dealing when he arrived at Macao in 1834. He (Mr. Ward) was carried up to Peking in a common conveyance; while he was in Peking, there were guards placed around his residence; both he and his suite were prevented from going anywhere. As one of the Romish missionaries residing in Peking in disguise at the time, wrote to his Minister, "*humilissime intravit*"; and he went out as he had come in. Now, if the Chinese had had any sense they would have put us in the wrong by conceding to Mr. Ward a reception that he could not have complained of. But they did not; and they simply let us see that we were perfectly right in insisting upon admission into Peking under circumstances of which we should not be ashamed. The result of their conduct was the third and last war; in order, then to force our way into Peking; in order once more, to secure enduring relations.

1293. That war closed in 1860, did it not?—I was just going to say, sir—

1294. The second war?—Well, I consider the second war, the war which arose out of the "Lorcha Arrow" affair—

1295. That was in 1856; Lord Elgin arrived in 1857?—Yes. Hostilities had been going on, you may say, from the moment the Chinese seized the "Lorcha"; at least, from about twenty days after her seizure.

1296. And the close of that war?—I consider the close of that war was when Lord Elgin signed his Treaty in 1858.

1297. (Mr. Mowbray.) The Treaty of Tientsin?—Yes; the Treaty of Tientsin. Then (in the following year) we went up to be admitted into Peking, and we were shut out and defeated.

1298. (Chairman.) And that gave rise to the third war?—That gave rise to the third war; to Sir Hope

Grant's expedition of 1860. We did then make our way up to Peking, the Emperor flying to beyond the Great Wall when we advanced upon Peking. From the day we were established in Peking, from that day to this we have had no more wars.

1299. Well, Sir Thomas Wade, you have given us a very interesting sketch of these unfortunate wars with China, and you have made it clear to us that in your view those wars were largely if not mainly traceable to the insistence of the Chinese in refusing to enter into friendly relations with us, and you contend that those wars were not prompted by a desire to force the Indian opium upon China?—Not even to force trade.

1300. You remained in China a considerable number of years after the last war was brought to a close, and were concerned in the most responsible positions with the many negotiations which were carried out between the British Government and the Chinese Government. Now would you say to us that in those negotiations it was not in the contemplation of the British Government to compel the Chinese authorities to receive importations of opium from India against their will; that, in those various negotiations other important matters were in view, but this particular object of forcing the importation of opium was never an object with the British Government?—On the contrary. You may say that the first time that it (opium) came up again at all in formal discussion was in 1868. In a casual way I have myself often talked the opium question over with different high officers,—one of them being a great opium smoker himself; but so far from there being anything like a suggestion that the opium trade, or that the opium taxation, should be re-arranged to our advantage, the first time that it appears after the war of 1860 is when Sir Rutherford Alcock was revising the Treaty in 1868.

1301. And under what circumstances does it reappear?—A suggestion was made on the part of Sir Rutherford Alcock to the Indian Government to increase the duty upon it. You will find that in the papers recording Sir Rutherford Alcock's revision of Treaty; in fact, it was one of the two causes which broke down his revised Treaty. There were two conditions, one affecting silk and one affecting opium. The Indian Government objected to that affecting opium, and both the French and various of our own merchants objected to that affecting silk. As regarded the opium, that was I think the only time that it came formally before negotiators until I took it up in 1876. And why did I take it up in 1876? Simply because at Shanghai a judgment had been given in respect of the taxation of opium which I considered to be unfair to the Chinese Government, our engagements with it considered. The article agreed to by Lord Elgin supplementary to the tariff which was signed in 1858 says that opium shall be saleable only at the port, and Lord Elgin, I cannot quote his despatch, but I can state his observation, repeated again and again to me, that his opinion of opium was such that he would not be a party to obtaining for it a participation in the favourable conditions of other articles of import. All other articles of import were subject in those days to a great deal of irregular taxation which one clause of his Treaty was intended to regularise; but he said: "I will not be a party to flinging opium broadcast 'through the Empire,' and for that reason he would not claim the transit duty certificate which, by an additional payment of half the tariff duty, was to secure our general import trade against this abnormal taxation inland. It must have been about the year 1874 that a case was tried at Shanghai between the agents charged with collecting opium revenue, or estimating it,—charged consequently with visiting the stocks and estimating the revenue in the interest of the Chinese Government. On the occasion referred to they came into collision with a body raised and paid by foreign residents, the quasi-municipal police, which takes care of Shanghai, greatly to its advantage, and the case being examined into by judicial authority, the judicial authority decided that as according to Lord Elgin's Treaty opium was saleable at the port, therefore we had in fact a right to hawk it about at the port." I held precisely the contrary opinion; Lord Elgin's appeal to the Chinese Government, in 1858, put in a few words, was this: "It is an irregular trade of which you have 'the fullest cognisance, regularise it, and put what 'tariff you like upon it; and I will not ask for the 'limitation of inland duty upon it. Once it passes 'from British hands we shall have no more to say to 'it.'" Well, I consider that that being our engagement,

Sir
T. F. Wade,
G.C.M.G.,
K.C.B.

15 Sept. 1895.

Sir
T. F. Wade,
G.C.M.G.,
K.C.B.
15 Sept. 1893.

a decision which would justify the quasi-municipal police in interfering with the Chinese overseers of opium revenue to the prejudice of the inland duty collection was not fair to the Chinese; and for that reason I volunteered in the Che-foo agreement—an agreement primarily concerned no doubt with what it known as the Yun-nan outrage; but incidentally, as my despatches show, made to include other matters,—I volunteered a suggestion that just as the foreign inspectorate now collects the tariff duty of 30 taels, (30 ounces of silver) upon the drug when imported, so it should be empowered to collect also the abnormal inland revenue to which the Indian opium *in transitu* was liable. Of this we had very imperfect information. We knew that it was exceedingly onerous to all trades, but I knew also that the Central Government was itself very imperfectly informed regarding the amount collected. It was vain therefore to endeavour to get accurate news from the provinces, but what I wanted to accomplish was not simply a regularisation of the trade,—the regularisation of the trade in opium as an import was not my business,—but I did desire to insure to the Chinese Government a defence against the foreign importer; a defence that I consider the Chinese were legitimately entitled to. Thus you will see opium, in my belief, was never alluded to in negotiations, except upon the two occasions that I have referred to; first, in 1868, when Sir Rutherford Alcock was revising his Treaty, and proposing an augmentation of the tariff duty on opium, and last in 1876, when I signed the Che-foo agreement. I will not be absolutely certain, but I believe that Sir Rutherford Alcock's proposition was much of the character of my own in 1876, to wit that the Chinese Government should have secured to them the revenue to which they were by Treaty entitled. Beyond that there has been no pretence to treat; opium taxation has never been, as I say, even alluded to, and I confess that I feel something passing common irritation when I am told that we introduced opium into China, that we taught the Chinese the way to smoke it, that we poisoned the nation,—that we made war in consequence of it, and that we finally forced it upon them with British bayonets in our hands; when I hear, as I heard Mr. Samuel Smith, the Member for Flintshire, inform 200 undergraduates at Cambridge one evening, that at last China overborne was obliged to take to producing it in her own defence. It is scarcely possible for me, I confess, to measure terms when allegations of that sort are made. Think how utterly unfair it is to our own friends, to our own countrymen, what a reflection upon them it is. However, I am not here to entertain you with my irritabilities.

1302. We were very anxious to have the position of the past cleared up, and we have been interested in what you have told us, Sir Thomas; there was one point upon which the Commission would wish to have your opinion, and that is, as to our position at the present moment. We have had brought before us repeatedly in the course of our inquiry an important official statement made by Sir James Ferguson in the House of Commons, which was to this effect, that the fiscal arrangements, the discretion as to the imposition of Customs duties or the discretion, as to the total prohibition, if they thought fit, of importation of opium from India into China, are now entirely free with the Chinese Government; Sir James Ferguson made it clear to the House of Commons that there were no conditions in the Treaties now in existence between ourselves and China which prohibited the Chinese Government, if they thought fit, from dealing in any way which they thought desirable with the opium trade. We understood the statement of Sir James Ferguson was to the effect that if the Chinese Government thought fit to do so, they could, after giving twelve months notice, raise the tariff on the importation of opium from India to China to any amount that they thought fit; or if they thought fit, might prohibit the trade altogether. Now that statement of Sir James Ferguson has not been accepted by all the witnesses who have appeared before us. They have contended that, that statement notwithstanding, the Chinese Government are not free to deal as they may think fit with the opium trade between India and China. Can you tell us how the matter really stands?—Well before referring to negotiations since my day, I wish to premise that partly owing to my own, I will not say *laches*, but still owing to me, the ratification of the Treaty hung fire for a long time. The causes independent of me were, I think these, that the financiers of the Indian Government were naturally alarmed, for I had not prepared them for a proposition regarding

opium at all in 1876; and in the next place, though there was not a formal intimation regarding opium from other Governments, there was evidence enough that they were not disposed to accept arrangements affecting it for different reasons. They were not disposed, some of them, to approve my Agreement at all, and they were in a position to neutralise its opium provisions, because with a very little organization they could have imported opium and if they had not accepted my arrangement, the Agreement stood in danger of falling through. As regards the statement of Sir James Ferguson, I am not prepared to make answer at this moment. I mean to say that I do not venture to affirm that there is nothing on record to the effect that the Chinese might if they chose raise the duty, or that they might take this step or that regarding opium. With the relations that we now have, no step of the sort, I should imagine, would be undertaken without preliminary negotiations. And allow me to say that I conceive it to be the farthest thing from probability that they will initiate anything of the sort under existing circumstances. In the amount which it was agreed between (I think) Lord Salisbury and the Minister Tseng should be levied, they have got rather more, or certainly at least double what I would have conceded. I had reason to believe (in 1876) that they collected as *li-kin* taking the ports all round, something like 40 ounces of silver in addition to the 30 ounces leviable by tariff; that they collected about 40 ounces upon every picul, every hundred Chinese pounds of opium. Now I would have conceded them more than that, though even of the 40 [which their native collectorate ought to have collected] they were not perfectly secure. I would have conceded them more than that in order to set the question at rest. However, as I say, the settlement hung fire, and Sir Robert Hart did not agree with me that what I thought fair was a sufficient sum to impose upon opium. He said that it would bear a total of 110 ounces taxation, tariff included, without any darger from the smuggler, and in his position of Inspector General of Customs, he was bound I think to advise the Chinese Government in that sense. If the Chinese Government were minded to-morrow to raise the duty or to make fresh arrangements regarding the revenue, there is not a shadow of doubt that we should not,—as in former days when there were no relations at all,—meet them with a direct negative; we should not refuse any proposition they might make without consideration; but I repeat it is to the last degree improbable that they will do anything of the sort. I should like before I close to supplement my answer to the question which your Lordship put to me just before this one, as to the action taken by the British Government. I said there were two instances in which the question of opium had come up, one in 1868, when Sir Rutherford Alcock was Minister, and one 1876 when I was Minister myself, and I mentioned the two propositions that had been made, both favourable to the Chinese, first by Sir Rutherford Alcock, and then by myself. I omitted, however, to mention a very much more important provision, in my Agreement, and that was that there should be a commission to regularize the trade of Hong Kong. About this naturally the Inspector of Customs was particularly anxious, because Hong Kong, being situated as it is, was in a position to export not only Indian but all native-grown opium right and left along the coast, without paying any duty whatever. We had paid some, without a doubt; but that a large portion of it would go into the pockets of employes, in fact that it would be a braach of irregular trade, no one could doubt for a moment. The Chinese very often argued, always with an allusion, more or less unpleasant, to the peculiar position of Hong Kong,—as they very frequently contended that they were entitled to tax every ounce of opium that came to China, that is to say, geographically speaking, to Hong Kong as well;—and I was prepared to concede, although it was not very pleasant to the Colony, that they were perfectly entitled to watch the trade between Hong Kong and their own shores in order that they might levy the duties that would legitimately accrue to them. For that reason I suggested that there should be a joint commission between the Chinese and ourselves to arrange to regulate the trade, more particularly the opium trade at Hong Kong. The result of that is that Hong Kong is now within the area of the Imperial Customs Inspectorate supervision. Allow me to say that, when we talk of forcing trade upon them with bayonets, those two last concessions in trade are some-

thing to set against any such allegation. If you think that I have taken upon myself, not as Mr. Lay has put it, to increase the war-tax,—to enable the Chinese to levy the war-tax through the hands of the Inspectorate,—but to secure to them that enormous increase of revenue which they now receive, which they never could have touched but a fraction of, had it not been for my intervention; and that I secured to them the regularisation of the trade of Hong Kong, I think that those two acts, on my part alone, may be set against the allegation that we have forced opium into that country at the point of the bayonet.

1303. There is one last question that I should like to ask you. You made an important speech on this subject at the Society of Arts, and that is before us. I take it from you that, so far as it went, that correctly represents your general view as at present entertained on the subject which has been before the Commission. There is one statement which you made in the course of that speech which I should like to hear a word from you upon, and that it is with regard to the attitude of the Central Government of China with reference to this question. Have you reason to suppose that the Chinese Government are sincerely anxious to put an end to the opium trade?—Well, the sincerity of parties is always more or less a delicate question. I attended, some four or five years ago, a meeting of clerical gentlemen who were also associated with the anti-opium, let me say, crusade—I do not use the word in any invidious sense—gentlemen associated for the purpose of abating what they considered the great evil of the opium trade, and they asked me straight, “Do you consider the Chinese sincere in their denunciation of opium?” Well, I could only meet the question by another: “Do you consider us sincere in the denunciation of a large number of practices which we do condemn both in society and in trade, and otherwise?” You would feel very ill-pleased if you were told that you and your countrymen were insincere. The Chinese notion of sincerity does not carry them as far perhaps in that direction as ourselves, but I should say a large number—a majority I will not say, for I am not in a position to judge—but I should say a large number are sincerely opposed to the opium trade, a very large number. I am very glad indeed that your Lordship has asked me the question, because I read on the occasion referred to a memorandum of an interview with the Ministers of the Tsung-li-Yamèn, that has been dealt with also in a way that I do not exactly like.

1304. You spoke in the Society of Arts in April, 1892, on Mr. Batten’s paper?—Yes, my Lord, but did I give the date of the interview at the Tsung-li Yamèn?

1305. Yes, you read the memo. of an interview on 16th January, 1881. You say that, “As regarded opium, certain points had been suggesting themselves to Sir Thomas Wade upon which the opinion of the Yamèn would be valuable. In the first place, as the Ministers were of course aware, the trade in opium, native and foreign, was regarded in different lights by the high authorities of different provinces, and their mode of action was dissimilar. Some were for stamping out native opium altogether, and restricting the sale of foreign opium by placing prohibitions on the consumption of it. In other provinces it was regarded as a source of revenue, the habit of opium smoking was not checked, but the drug was heavily taxed, the vice being turned to account as a means of enriching the exchequer. As these modes of procedure were diametrically opposite, Sir Thomas Wade would be glad to be informed what was the policy favoured by the Central Government. Th Minister addressed replied that the question was not an easy one to answer. He did not think that the Central Government had gone so far as to formulate a policy at all.”—Yes. But the sequel is much more important, my Lord, Shall I read it?

1306. Yes, what I have read to you will lead you up to your answer, no doubt?—I should inform your Lordship that the paper which I read on that occasion was one of a collection which I have marked “Conferences on Opium.”

1307. Perhaps you would put that in?—Yes. I do not see that I might not. But on the occasion on which I read it, I did not mention the name of the Minister who made it because, as I observed at the time, Chinese Ministers do not delight in having their names carried about; they are not so indifferent to it as we are; and for that reason I concealed the name of the Minister

speaking; and I have seen in the Anti-Opium periodical that he is referred to as an anonymous Minister. Will the proceedings be published necessarily?

1308. No; we might perhaps look at it?—Well, I merely wish your Lordship to understand that this is a collection of conferences on opium at the Tsung-li Yamèn, the Chinese Foreign Office, during the years 1880, 1881, and 1882, and my usage, during the latter years certainly of any tenure of office, was to enter a formal report of all conferences at the Yamèn on anything more than an ordinary question in a journal. Furthermore, it was my usage to be accompanied by some of my interpretorial staff or others. On this occasion I was accompanied by Mr. Hillier, now Consul-General in Corea, and there were present four Ministers whose names are given in the memorandum before you. The Minister with whom I had the conversation just quoted, was at that time virtually the Foreign Minister. Our real Foreign Minister must have been considered the Prince of Kung, the Emperor’s uncle. He was some two or three years after I left Peking degraded on one of the common charges in China, corruption, and with him fell the Minister who was speaking (on the 16th January 1881). He was one of the very ablest men that in all the years I was in China I ever met, and one of the fittest certainly to be a diplomatic Minister. He is now rising again, after the fashion of the Chinese, and is at this present moment at the head of an enormous government which is overgrown with opium. “The Minister addressed replied that the question was not an easy one to answer. He did not think that the Central Government had gone so far as to formulate a policy at all. Speaking from a general point of view, however, he might say that if the habit of opium-smoking could be universally and at once abolished, the Chinese Government would be ready and willing to sacrifice the revenue that was at present derived from opium. All sensible men were nevertheless agreed that this was an impossibility. The habit of opium smoking was beyond the reach of prohibition, and the idea was how to turn it to account. The only way in which it could be turned to account was by making it a source of revenue, and the revenue thus derived was indispensable. There were, moreover, so many other matters that needed reform before the opium question was taken in hand, that it might safely be said that the abolition of opium had not entered the minds of those entrusted with the government of the Empire. Sir T. Wade went on to say that many persons, notably the foreign missionaries in China, had been urging on the British Government through various channels the advisability and the equity of abandoning their connexion with opium. Suppose, for as yet it was a pure supposition, that the British Government were eventually to effect a gradual diminution of the opium trade from India, by limiting the import to an increasing degree, year by year, until the trade was abolished altogether, did the Minister think that such an arrangement would meet with the approval of the Chinese Government? The Minister addressed, who again protested that the question was a difficult one to answer, replied that in his opinion such a plan would be useless. As long as the habit existed, opium would be procured somehow, and if it did not come from India it would be procured elsewhere. Any serious attempt to check the evil must originate with individuals. As long as men wanted to smoke and insisted on smoking, they would smoke, and a spontaneous abandonment of the habit on the part of the people would regulate the supply. Nothing short of this would do any good, and philanthropic efforts to check the evil in the manner suggested by Sir T. Wade would affect the revenue only, without in any way reaching the root of the mischief.”

1309. Is there anything further that you would like to say?—There are one or two things bearing upon the sincerity of the Chinese in the matter. It must be admitted by all those who have been in touch with this question for fifty odd years, that there is an amount of inconsistency on the part of the Chinese respecting it that puts their sincerity very much in question. There are several of them, as I said, that are perfectly sincere. The son-in-law of that great Commissioner Lin, whose violent action was the immediate cause of the first war, the son-in-law of that man was a few years ago Governor-General of the three provinces of which Nanking is the centre. He put down,—not opium smoking—he could not do that,—but all public opium divans. And now and then you will find individual officers taking a

Sr
T. F. Wade,
G.C.M.G.,
K.C.B.

15 Sept. 1893.

Sir
T. F. Wade,
G.C.M.G.,
K.C.B.

15 Sept. 1898.

step of that kind. But it is rare. You will find all over the country prohibitions against opium planting and opium smoking; and yet, as a letter from a missionary which I saw in a paper shortly before I left Peking, in 1882, stated, he had just passed through a field of poppy with the proclamation planted in the middle and the white poppies growing round the posts of the board on which the proclamation was posted. And you have more than that; you have the regular taxation of it, and you have now, if I do not mistake, in fact, I am sure of it, you have a regular quotation of the revenue derived from the native cultivation of different parts. But what I was about to call attention to as something of an argument on the side of inconsistency was the Will, as it is called, of the old Emperor against whom we made war in the first instance. The old Emperor was reigning as Tao Kuang. He was supposed, logically, to be pronouncedly opposed to opium smoking. In the year 1836, that is three years before our first hostilities, a censor of high reputation, Hû Nai-tsi by name, proposed that opium should be legalised on a duty of 8 per cent., and he was not at all without supporters. But his opponents were more powerful, and it ended in his being exiled to the far west of China as a punishment. It was almost immediately after that that the rigorous measures against the opium traffic and the opium smoker were revived. It should not be forgotten that all those who denounced it, denounced it to the full as much upon financial as moral grounds. What alarmed the Court? I cannot think that the small quantity imported alarmed the Court so much as the evidence that silver was being carried out of the country to pay for it. But the old Emperor was justly supposed to be a pronounced anti-opiumist; and it is therefore very remarkable that in his Will the misunderstanding which lasted from 1839 to 1842—our opium war—should be treated in the way that it is there treated. These Wills, as they are called, are prepared very much as our Speeches from the Throne are prepared—by the highest authorities; but these same high authorities must have also prepared the extremely lofty decree and the arrogant papers which were issued after we were excluded from Canton in 1849. The Emperor died just at the beginning of 1850, at the end of February 1850; and then there appeared this document, which, as I say, is very much like one of our Speeches from the Throne. It is in effect a review of his reign. After praising himself for his vigilance and his industry, his thrift and frugality, he comes to the rebellion of 1826–1828, a very serious movement in his Mohammedan Colonies, and then to the war with England.

“When the poor fools [the Mohammedans] that dwell beyond the western frontier had been chastised by our troops,” he says, “for many years we presumed not to vaunt our martial prowess, until a quarrel arose out of a question of commerce upon the eastern coasts.” [These are the terms, observe, in which our war of 1839–42 is alluded to.] “Even then, being as the good men of ancient times who held humanity to be the chief of virtues, how could we bear that our innocent babes should be exposed to the cruel wounds of the sharp-pointed spear? It was for this cause that we put away our annoyance and entered into an important compact [the Treaty of Nanking]. Giving comfort to our own dominions we showed tenderness to those from afar. And thus in the course of ten years the hurtful flame has expired of itself; our people and the barbarians trade together in peace, and all may now perhaps comprehend that in this policy we were actuated by the constant fondness of our people felt in our inmost heart.”

There is not a word of reference to opium in that. After his successor had ascended the throne, he immediately, as is usual, asked for counsel of his advisers. The result was the presentation of some 50 odd papers, which I have here, either in translation or in précis. I do not think that opium is mentioned twice in the whole of them. I say that these are certain arguments to prove, well, if it be not indifference, certainly a not very active feeling in reference to opium.

1310. (Sir J. Lyall.) Sir Thomas Wade, in the evidence before us, and in the memorial to the Prime Minister signed by a great number of influential people, reference is made to what is called the “affecting appeal” made by the Chinese Commissioners for the revision of the Tientsin Treaty, in 1869, to the English Government to alter its policy with regard to opium. Will you kindly tell us what your view of that incident is, and how far was the appeal sincere; that is, were the Chinese thinking of prohibition, or were they

aiming at an increase of revenue?—I was not at Peking at the moment; I was on leave, and did not return until after Sir Rutherford Alcock's revision was completed. But I remember an account of his last conversation with the Prince of Kung before he started, in which the Prince had said that the only two troubles of China were opium and missionaries, and I should say (in answer to a question asked me) that this remark did not indicate a desire to increase the revenue; that it would rather be the other way, because the Prince of Kung's right hand at that time was not the Minister whose remarks I have been reading to you, but a very great man; great in this way, for though he was narrow, he was a singularly patriotic, clean-handed, Minister—very; and he was himself a tremendous anti-opiumist. He carried his antagonism to this point, that on one occasion when he was ill, and pressed to take laudanum, he would not touch it because it came from the poppy. He would have been a very likely man to suggest such a remark as that quoted. At the same time I was informed, on the very best authority, that when Sir Rutherford Alcock's proposition (and the whole of the negotiations were then over when this conversation that I speak of took place), Sir Rutherford Alcock's proposition, which promised an increase of revenue, came before the Minister in question, he chuckled very undisguisedly over the prospect of the revenue's improvement.

1311. With reference to that statement as to the action of the United States Minister, at the time of negotiating the Tientsin Treaty, I wish to ask how you would explain the fact that in two Treaties recently concluded between the United States and Russia the importation of opium is prohibited. Do you think the Chinese asked the insertion of the clause, or that the United States and Russia suggested it for any motive?

Well, I do not know myself about Russia, I had overlooked the fact of Russia's participation in the matter, but as regards the American proposition, I was informed at the time (I think that was in 1881), that it was put forward by the Americans in the hope that by the proposition they might in some way balance what they were taking away. In 1868 they negotiated a Treaty about emigration on both sides, which was the doing of Mr. Secretary Seward and Mr. Burlingame, the American Minister [then, however, representing China]. This laid down that the President of the United States, recognising no less than the Emperor of China that every human being has a right to change his domicile, &c., &c.—Well, in less than ten or twelve years after that, for reasons more particularly affecting the State of California, the Americans found that they had more Chinese than they wanted; in fact, that there was a very decided set of the labour people, the Irish of California more particularly, against the Chinese, and they wanted to undo that Treaty; and I rather think that I have seen it in my own despatches recently, that I reported that the proposition regarding opium did come spontaneously from America, as a kind of *quid pro quo*. The Chinese set no kind of value upon it, because America was not an opium-producing country, nor, in general, although on occasion when it suited them, an opium-carrying people.

1312. Another reason, I suppose, would be that I believe there is a certain anti-opium party in the States who have a religious belief?—Oh, necessarily; there is pretty sure to be; indeed, quite sure to be. They have, I should think, as strong an anti-opium party in the States as our own.

1313. There is one question that goes a little beyond the question that Lord Brassey put, and perhaps you may not be able to answer it; but I should like to put it. You have said that a large number of respectable Chinese are sincerely opposed to the opium trade; but do you think that the Chinese Imperial Government, if now formally asked by us, would say that they wished us to prohibit the import of Indian opium into China? Can you answer that?—I think that you would merely draw from them one of those generalisations, such as the Grand Secretary Li-Hung Chung and the late Minister Tseng and others put forth when they were approached by well-intentioned bodies in this country. In the same way, no people have a greater happiness in the composition of documents tinged with morality than the Chinese; but it would never enter their heads that the step was seriously contemplated. I should think their first impression would be to doubt your sincerity in the matter; but their answer, I think, would simply amount to this: Supposing that the British Minister, or a body of British anti-opiumists, were to approach the

Chinese Government, saying, "The Indian opium trade is an awful curse to your country; implore the British Government to give it up or to exclude it," they would answer, "The remedy appears to us to be in your own hands; if you do not like to export it, give up exporting it." They would meet you in that sort of way. But, as I said before, I think they would be inclined to doubt your sincerity. And even supposing now that there was in this country the popular feeling against it that there was, say, against negro slavery, and that there was such a feeling in the country that it was decided to have done with the export of opium to China *in the interests of the Chinese*, I can only say that you might just as well pull down this edifice that we are in here in order to put out a fire in Whitechapel. Because you have got in China a large opium-producing and opium-consuming country, accustomed to the use of opium long before any troubles with us began. And allow me to add one thing more, *apropos* of Mr. Griffith John's remark, that the opium traffic once abandoned by us, we should be on beautiful terms with the Chinese, and that there would be the greatest possible improvement, particularly in respect of missionary enterprise, and in fact all round, I venture to say that I doubt it exceedingly, because I remain true to what I have urged before, our difficulties with China are of an entirely different character. The Chinese have still got to learn, as a nation, that we are their equals. The Central Government has accepted this fact, and a very unpopular concession on the part of the Central Government it was; but as to the improvement of relations, and particularly as regards the preachers of religion—I do not want to commit your Lordship and the Commission to the hearing of an Essay on Missionary Enterprise—but what you have got to do in that country is largely to reinforce your missionary body with a very different description of missionary from those whom you generally enlist. As the Minister Tséng observed to me on one occasion, "Your missionaries are getting at the lower people, but you are not approaching the higher. Why did Buddhism make the way it did in our country," asked he, "because the works on Buddhism translated into Chinese (from the excellence of their style) appealed to the educated section of the community," and not only to a part but to all the literary men. Nor must we necessarily commence with theology.

1314. (*Chairman.*) That lies outside the purview of the Commission?—Quite. I was speaking simply in answer to Mr. Griffith John's remark.

1315. (*Sir J. Lyall.*) You said, I think, that when you were negotiating the Che-foo Convention, it had to be borne in mind that, if the other Powers did not agree to the arrangements we might make to regulate and restrict the opium traffic, they might easily organise an import trade of their own. I want to ask you where do you suppose that those other Powers would get the opium to import; from our people?—There were people talking already, when I returned to China in 1879, there were people talking of changing their flag and carrying opium under flags not British.

1316. I mean to say, do you think they would get it from India?—That would depend on the Indian Government. I am not prepared to say. But remember that though they import mainly Indian, they also import Turkey and Persian opium; and, furthermore, there were foreign representatives who were prepared to support the step contemplated, because it would have been a weapon in their hands; it would have been something to give up to China.

1317. (*Mr. Pease.*) Perhaps you are aware that the secretaries of the Anti-Opium Society, if not the members, always avoided speaking of the introduction of opium into China as having been first introduced by the English?—I was not aware of it.

1318. That has been very carefully done?—I can only say that verbally I may include wrongly some people in the Anti-Opium Society. But anti-opiumists have made that statement.

1319. But the Society has repeatedly repudiated it, although at one time the quantity of opium introduced was very small. You have said that your views had been to some extent modified with regard to the personal effects of opium. May I take the statement that you made in 1871—shall I read it?—as being generally your feeling at the present moment?—It was earlier; I think it was in 1868.

1320. "China.—No. 5 1871"—is, I think, the paper. "It is impossible to deny that we bring them that quality which, in the south, at all events, tempts them the most, and for which they pay dearest. It is to me vain to think otherwise of the use of the drug in China than as of a habit many times more pernicious, nationally speaking, than the gin and whisky-drinking which we deplore at home. It takes possession more insidiously, and keeps its hold to the full as tenaciously. I know no case of radical cure. It has insured, in every case within my knowledge, the steady descent, moral and physical, of the smoker, and it is, so far, a greater mischief than drink, that it does not, by external evidence of its effect, expose its victim to the loss of repute which is the penalty of habitual drunkenness."—It is in my Report on Sir Rutherford Alcock's Treaty Revision project submitted to Lord Clarendon, by his desire, in 1868. Yes; I have modified those views, as regards especially the question, of cure. As I said in the course of my address to you just now, I have known,—I will not say many instances,—but I have known a certain number of instances where the cure has been complete, and that in one case which is always specially before me, in the case of a man who filled a position of considerable responsibility. He was a species of head steward (we call them *compradores*) of the British Consulate. I spent the year 1867 in that Consulate, and this man, who was a singularly intelligent, useful person, was then, as I conceived, in the very last stage of opium decay. He had every symptom of decadence. A more active, intelligent man, when he was not in the dream, I would not wish to meet. But I have sent for him sometimes in that year when it was pitiful to see him. To my utter amazement, in 1882, I think it was, on my way home, I met this man looking hearty and well in Shanghai, and I said to him, "How comes it you are so well?" "Oh," he said, "The Consul put me under a British physician, and after a certain time I was quite cured." "But (then I said), have you given up opium altogether?" "Oh, no; but I used to smoke ten pipes, and now I smoke three." But I assure you he was as fit as any man that you could meet at the time that I am speaking of. That is really a salient instance. I have seen others, and, to boot, I have noted, perhaps, I have paid more particular attention to it [the question of incurability] than when I wrote the words quoted. I wrote them when I was far nearer my long residence in the south—I was eighteen years in the south before I went to Peking, where I was twenty-two years—and in the south I must say I had oftener seen cases that might have justified strong language. But even then the words just quoted would be an exaggeration, because I had heard stone-cutters and people of that sort,—people with hardly rags to their backs engaged in the roughest possible work, talking of the necessity of a little opium during the cold weather. When in 1874 Mr. Margary travelled across China to the frontiers of Burmah, he noticed, in one place especially, that his boatmen, the people who had been working a boat for days against the stream, that they, all of them, took their ration of opium regularly. I know, to boot, from other people who have been in my employ or connected with me, that they were in the habit of taking a certain allowance of opium just as we take our allowance of wine.

1321. You speak of the war as being not a war of the character which has often been described. Of course you are aware that contemporaneous authorities of very high authority take a very different view at the same time?—Perfectly.

1322. I observe here a remark of Mr. Gladstone's: "A war more unjust in its origin, a war more calculated to cover this country with permanent disgrace, I do not know, and I have not read of. The right hon. gentleman opposite spoke of the British flag waving in glory at Canton. That flag is hoisted to protect an infamous contraband traffic; and if it were never hoisted, except as it is now hoisted on the coast of China, we should recoil from its sight with horror. Although the Chinese were undoubtedly guilty of much absurd phraseology, of no little ostentatious pride, and of some excess, justice, in my opinion, is with them; and whilst they, the pagans, the semi-civilised barbarians, have it on their side, we, the enlightened and civilised Christians, are pursuing objects at variance both with justice and with religion."—I should like to know what Mr. Gladstone had then read of the antecedent relations between us and the Chinese, or what he then knew about the opium trade in China at all.

Sir
T. F. Wade,
G.C.M.G.,
K.C.B.

15 Sept. 1893

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15 Sept. 1893.

1323. That was a declaration made in the House of Commons in a discussion?—I recollect it. He spoke one of the most magnificent speeches he ever spoke on the "Lorcha Arrow" affair. I remember the ring of that speech, when, after reviewing the incidents, as he understood them, of the quarrel, he asked the question if we thought that these things could add to either our honour or profit. "Why," said he, "they deepen your guilt." The speech went the round of Europe. Louis Blanc quoted it in his printed letters. But it is wrong. It is written in perfect ignorance of the relations of England and China; and as long as that view is held so long will you have all these collisions, the fault of all collisions with China, laid to our charge. But it would be—even in the case of what is called the "opium war" it is—inexcusable to formulate the accusations that I hear formulated without reading the story of the misunderstanding, all the incidents that had anteceded the final collision.

1324. I observe in connexion with a letter which was written by Mr. Lay to the *Times*, to which a reply was written by Mr. Alexander, in which there is a quotation which is dated 1858, from a Report on a Revision of Tariffs, furnished by yourself and Mr. Oliphant, in which you state that "one of the Chinese Commissioners, whose position as Superintendent of Customs at Shanghai," says the report, "naturally gives him a chief voice in such matters, admitted the necessity of a change. China still retains her objection to the use of a drug on moral grounds; but the present generation of smokers, at all events, must and will have opium. China would propose a very high duty, but, as opposition was naturally to be expected from us in that case, it should be as moderate as possible." Would you accept that as a genuine expression of Chinese feeling?—I am not sure, although I read very recently that over—I am not sure that I quite follow the argument in the case.

1325. Well, his ground is that the present generation must and will have opium, and they will propose a very high duty; but as opposition must naturally be expected from us, in that case it should be as moderate as possible; that we would not allow them to place as high a duty as they would, they having a moral object in view?—In truth, the duty was arranged between the Chinese official and Mr. Lay.

1326. (Chairman.) What was the date of that?

1327. (Mr. Pease.) That was in 1858?—They met us with an offer, I think, of 34 ounces. As I stated, Lord Elgin's formula was, let them tax it as high as they please; only regularise it. I went on my part, and consulted persons in whom I could have confidence, particularly one, as to what was fair to put upon it. He had been himself a merchant, far back in the East India Company's time; he was a man who thoroughly understood all the conditions of the trade, and he said 30 ounces would be a fair duty.

1328. How do you regulate what is fair for the Chinese to put?—Well, with reference to its value.

1329. Why should not the Chinese have full liberty?—Well, I am speaking of what we had before us in 1858, when they were exceedingly well pleased to add to their revenue. The important point is that they did not dispute it. They did formally propose those 34, and we abated it. That paper to which you refer, signed by Mr. Oliphant and myself, was drawn up by me, but it does not give in detail the whole of the interview. There is one most important incident left out, probably because I did not think it sufficiently serious; and that is that the whole thing having been well thought out between Mr. Lay and the Superintendent of Customs, when we met for our first conference, inasmuch as it was a proposal affecting opium, or as it is generally called, the foreign drug, both Mr. Oliphant and myself came to it with a certain amount of formality, and were beginning to talk about the amount, when the Superintendent, who was a very rough man, burst out into a laugh, and asked, "What is the use of talking about that when Mr. Lay and myself have settled the whole thing?" And they put forward, I do not know if it was Mr. Lay's suggestion or not, they put forward 34 taels, and after a very slight debate 30 was accepted. I am bound to observe that if they had asked for 100, Lord Elgin would have given it them.

1330. By the Treaty of Tientsin, opium imported from India had to pay an import duty of 30 taels a picul?—Yes.

1331. And after leaving the importer's premises was further liable to such local taxation or *li-kin* as the authorities chose to impose?—Yes.

1332. But when you negotiated the Chefoo Agreement in 1876, you proposed in the first instance that the drug opium when brought into port should be bonded until sold?—Yes.

1333. And that when sold the importer should pay the duty and the purchaser at the same time the local tax or *li-kin* and both to the Foreign Customs Inspectorate?—Yes.

1334. Will you explain what advantage this would have afforded to the Chinese over the old Tientsin arrangement?—It would have secured to them,—I thought I had explained, that the first of my stipulations was that the rate should be even at all the ports. They had been in the habit of putting on one rate here and another rate there; it was a great derangement of the foreign importer's business transactions, and in some places you had a ridiculous state of things, such as this: the Port of Amoy is just at the southern tip of the province of Fu-kien; the Port of Swatow is just at the eastern end of the province of Kwang Tung, which is next door to it. They had positively at one of these two ports,—I think at one time they were putting on 58, or something of that sort, whilst at this next port they were putting on 24; and then when they found that there was in consequence so much opium going to the latter port, the one rate went down and the other went up; and there was all that kind of uncertainty. And there was this to be said, that as it was collected, not by foreign officers, but by Chinese, a great portion of it was lost to the Government. Though they believed themselves to be getting something like 40 taels a picul all down the coast, they did not get one-half of it, or at all events not three-fourths of it. I proposed that they should get the whole of that, and indeed I contemplated a rise upon it; and I attempted, in 1879, when I returned to China, to raise it; but circumstances interfered with the negotiations, which were discontinued.

1335. Indeed it was very largely to prevent contraband, to make it easier for the Chinese to collect the tariff, I suppose?—It was to secure them, what they were entitled to, and, as I have informed you, I think, it was suggested to me by the fact that I considered a decision of our Supreme Court had been unduly against the Chinese.

1336. Why did the Home Government refuse to confirm the Chefoo Convention, and leave it open for so long a period?—For the length of the period I am in great part responsible. I was interrupted by various incidents. In the first instance, in 1876, no sooner was my agreement signed than all my colleagues,—at least no sooner had I left China for England, than almost all my colleagues virtually protested against the whole thing, although two of them—but it is of no use going into those details. On the other part, the Indian Government were very naturally alarmed lest there should be a sudden or even a gradual increase of this inland taxation. They were at one time willing that opium should be liable to the tariff duty of 30 taels *plus*, on my estimate, an inland duty of about 40. I certainly had contemplated making such an arrangement as, whilst it would add to the amount that the Chinese had believed themselves entitled to receive, would be more or less fixed; that there might not be the irregularity attending it that there had been. But in the first place, when I came to discuss it with the Grand Secretary Li Hung Chung I imagine that I did not move fast enough; then, later on, there were other interruptions; there were other considerations; and finally when my tenure of office came to a close at the end of 1882, the thing was not concluded. On the whole, that it dragged must be put down to my charge more or less.

1337. No doubt it did drag largely because the Home Government were afraid that it would give the Chinese Government too much liberty with regard to the imposition of provincial duties or internal duties?—That at first no doubt was the feeling in India, but I do not think it would be fair to set down all the delay to that cause. On the contrary, in that year, you see, amongst negotiations which came into my hands, there were negotiations arising out of the Treaty of another Power which would have led, I think, in the long run to the disappearance of some of the difficulties affecting trade in the interior; or, at all events, to the protection of imports carried inland against the taxation which

was so depressing our trade inland [and against which all foreign Powers, ourselves included, had long been protesting]. As you may see very well, it was an excellent opportunity to put an end to this. The Chinese were waiting for a settlement of this opium inland arrangement; but they were all the time collecting *li-kin*. We did not interfere with their collection so far as it was in their own hands; but this improved system, which they were right willing to see put in force, would have been a very fair argument in our hands that they should meet us half-way as regards the inland taxation of the regular trade and the trade outside opium. Well, we [the foreign Legations combined] had got a considerable length by the end of the year 1879, when there was what you may remember as the Russian scare, which threw the whole of us back for a twelvemonth; and then there were other delays and other delays, and I left China in the middle of 1882, with the business unfinished, and to a certain extent I may say that I was responsible for the delay; indeed, in no small degree. When I returned home, after a certain interval, the Foreign Office, would have been, I think, very glad of my assistance to bring the matter to a conclusion, but I was, to use the simplest term, not equal to the effort, and the delays, I am sorry to repeat, must be more or less charged to myself.

1338. Did the Chinese Government ask for free liberty as to the amount of the *li-kin*?—No. In one sense they asked for free liberty, because I proposed in the first instance what I knew them to be then getting as the *li-kin*, and indeed offered more; for whereas I felt quite sure they did not get 40, I was proposing 50; and I have since learned that if I had proposed 60 they would have closed with it joyfully; but the interruptions that I mentioned [those for which I was not responsible] ensued, and the result is that it is now being taxed a great deal more than I had ever contemplated that it would be.

1339. The result was that they were only able to get the Convention which you had made with them confirmed on their accepting 80 taels?—Is not that so?—I should hardly say that. I was not in the affair at the close, but I should say that it was hey who pressed. We did not limit them at 80. But they pressed up to 80. It was they who pressed, and on Sir Robert Hart's inspiration. They were asking for 80; was not we who were abating. They never asked for more than 80; and indeed when I was leaving China, that very able man whose conversation I read to you a short time ago called on me only a few days before I left—called on me to say that they would be perfectly satisfied with 70, which would give them the 100 taels on the whole. The Grand Secretary Li, too, had told my Chinese secretary the same thing but a short time before. The was no constraint whatever, not the slightest.

1340. The Chairman has asked you, I think, a question with regard to Sir James Ferguson, and you said you could not, in the full, from your experience, confirm what Sir James Ferguson has said?

1341. (Chairman.) With reference to the full discretion of the Chinese to deal on tariff or prohibition with the importation of opium?

1342. (Mr. Pease.) I was going to put this question: It was stated by Sir James Ferguson in the House of Commons' debate on April 10th 1891, that "the Chinese 'at any time may terminate the Treaty on giving '12 months' notice, and to protect themselves they 'may increase the duty to any extent they please, or 'they may exclude it altogether.'" Is that language in your opinion a fair description of the position of the Chinese in the matter of their Treaty relations with us?—Yes; my proper answer to that should have been that "I have not read to my knowledge, anything in 'Treaty or Correspondence that would bear out such a 'statement as that." But I do not mean to say that it is not true.

1343. And again it was stated by Mr. Curzon, the late Under-Secretary for India, in the House of Commons' debate on 30th June 1893 that, "under a clause 'of the Chefoo Convention of 1866, it was possible for 'the Chinese Government, upon giving 12 months' 'notice, to abrogate the Treaty, or to put an import 'tax on the article, or even, like Japan, to prohibit 'its introduction altogether into any of its ports." Is that, in your opinion, a fair description of the relations of the Chinese with us in the matter of opium? Your answer will be very similar to that to the other question?—No; pardon me. It must be "that I have not

"seen it in any Treaty or Correspondence." Perhaps I recal things more vividly that I was connected with myself. In Clause 7 of the Additional Article, which is signed at London on the 18th July, 1885: "The 'arrangement respecting opium contained in the 'present Additional Article shall remain binding for 'four years, after the expiration of which period either 'Government may at any time give 12 months' notice 'of its desire to terminate it, and such notice being 'given, it shall terminate accordingly." I should think that that covered—

1344. (Sir J. Lyall.) What would be the result of that notice being given? Would they fall back on the Tientsin Treaty, or what?

1345. (Mr. Pease.) Perhaps you would kindly read the last clause, Sir Thomas?—"It is, however, agreed 'that the Government of Great Britain shall have the 'right to terminate the same at any time, should the 'transit certificate be found not to confer on the opium 'complete exemption from all taxation whatsoever, 'whilst being carried from the port of entry to the 'place of consumption in the interior."

1346. The last clause would you kindly read?—"In 'the event of the termination of this present Additional Article, the arrangement with regard to opium, 'now in force under the regulations attached to the 'Treaty of Tientsin, shall revive." Yes.

1346A. It is your view that if they were to denounce this Treaty, then they come under the provisions of the Treaty of Tientsin; which, while it gives them the power to increase the *li-kin*, takes away from them the privilege of objecting to taxation as arranged by you through the Custom House?—Yes. Not arranged by me.

1347. Well, it is in your Convention?—It is the Supplementary Article [not negotiated by me]. I am bound to say that a great deal of what is written in that kind of way has passed out of my memory as being practically of no importance. My own conviction is that you will never have a proposition from the Chinese Government on the subject.

1348. I would just remind you that in the conference held in May, 1881, a chief Minister, the Marquis of Tso, made a proposition going much beyond the mere imposition of a duty of 110 taels?—I remember perfectly well his proposition; indeed, I think it was in a Memorial to the Throne, that the recommendation that they should put 150 taels on it was made. This, to a moral certainty, would have enhanced the premium and revived smuggling all along the coast, whereas Sir Robert Hart's limit was that which would put the trade out of the fear of the smuggler.

1349. Is it your view, may I ask, that the English Government ought not to interfere in any degree in fixing what the internal duty should be?—It ought not to interfere? Do you mean morally.

1350. No; as a matter of what ought to be left to an independent nation?—Well, that is to say, whether it would not be more becoming to England to put it back to the condition of things before any agreement were signed: let us pay an import duty, and then leave the inland taxation entirely for themselves. I think you could not do China a greater dis-service. One of the curses of China at this moment is the multiplication of the offices of the inland revenue, which are all corruption personified. It would be depriving China of so much revenue, and it would be ensuring an amount of maladministration of which, I think, you would be sorry to realise the result.

1351. I have only further to say I am requested to state that the Secretary and the previous Secretary of the Anti-Opium Society have never used the term "second opium war." It is a term that has been used by others; it is not a term that has been adopted by them?—It has been used by anti-opiumists.

1352. (Mr. Wilson.) Sir Thomas Wade, I want to ask you a few questions. At the beginning of your evidence I think you made a kind of comparison between opium in China and drink in this country?—Yes.

1353. And you suggested something, if not like insincerity, at least like inconsistency, in the outcry about opium while we tolerated drink?—I would not say opium while we tolerate drink. I was speaking rather, I think,—for I had not prepared a speech,—I was thinking rather of the tone of the condemnation. I consider that there is a sufficient analogy between the

Sir
T. F. Wade,
G.C.M.G.,
K.C.B.
15 Sept. 1893.

Sir
T. F. Wade,
G.C.M.G.,
K.C.B.

15 Sept. 1893.

two evils to bar us from indicting the opium trade in the way that we do indict it; from using the exceedingly censorious language that we apply to it.

1354. That is what I understood. But then I have no doubt that you are perfectly aware that there is a very large number of persons and of associations of different kinds in this country, which from various points of view, and with various degrees of stringency, are saying very strong things about drink, too?—Yes.

1355. And if any of these persons are taking part and using the same sort of language about opium in China, there is no inconsistency about them?—Not if it is only the same kind. But they use about opium in China very much stronger language when they charge Government agents and communities with forcing it upon China. What would you think if you could charge a Ministry of England with forcing drink on this country at the point of the bayonet.

1356. I am afraid I am not a witness?—I beg your pardon. It was a mere form of words. I did not intend to make a personal remark at all.

1357. Then, another question. You referred to some period,—I am not sure what the exact period was,—but you referred to the fact that at that time there was not enough opium being sent into China for more than 2 per cent. of the population, I think it was?—Yes.

1358. Well, of course, the adult male population of any country is roughly estimated at 20 per cent.; therefore, if there was enough opium for 2 per cent., it would be one-tenth of the entire male population?—Pardon me; a remark was made, I can hardly remember now in what connexion, because it was by a missionary whose name I said I did not mention, because I was not absolutely certain of his identity. I believe him to be a missionary of very long standing and of the very highest respectability; and I entirely forget now in what connexion he produced the paper in which I read it. But I remember reading it with great astonishment. I simply gave it for what it is worth. I presume that he had in his mind, of course, not every man, woman, and child in the country, but taking the mass, we are in the habit of speaking of “poisoning the nation,” and I think that he was in all probability deprecating the severity of that remark.

1359. I only want to see whether you agree with me that, even putting it in the form in which you did put it, it would amount in a population like that of London to providing sufficient for 80,000 to 100,000 of the male adult inhabitants of London—that would be the proportion; that is 2 per cent.?—Well, I should not venture to say so. I am almost sorry I cited the remark.

1,360. Very well. I will not pursue it?—I cited it because it was the testimony of a missionary,—that is the way I interpreted it,—it was the testimony of a missionary against what I conceive to be a certain habit of exaggeration in condemning what is no doubt a serious evil.

1361. Now, then, in reference to some questions that, I think, were put to you just now by Mr. Pease with reference to the ratification of the Chefoo Convention; I find that in September 1881, a meeting of merchants was held in Bombay, when they sent a memorial to the Marquis of Ripon, who was then Viceroy, and in the fourth clause of the memorial they say—“Your memorialists, seeing the great injury that would have been done to the Indian opium trade if this proposal had been carried into effect, petitioned the Secretary of State at that time on the subject, and succeeded” (that is, the memorialists succeeded) “in inducing the Government to stop the ratification of the Chefoo Convention.” You agree with that?—No. The memorialists, the Bombay opium merchants, did protest; their representatives in China had protested to me, too, very strongly against it; but it did not arrest the ratification of the Chefoo Agreement the least in the world.

1362. Then you think they took more upon themselves than they were justified in doing?—I should think so. I think it is very natural that when the thing hung fire they should assume that this was owing to their remonstrances; but I think they were mistaken, because I know that the non-ratification of it was due to other causes.

1363. Well, then, Sir Thomas, I find that in February 1870, Sir Rutherford Alcock was present at a meeting of the Viceroy in Council, which apparently was called for the purpose of conferring with him upon the prospects of the Indian opium revenue, and he gave an

account which occupies a page or more here—an abbreviation of his statement with reference to what had taken place—his views, and then comes this paragraph. I am putting it to you to ask you how far you agree with what he stated. “In answer to question put by His Excellency the Viceroy and others, Sir Rutherford Alcock said that he had no doubt that the abhorrence expressed by the Government and people of China for opium, as destructive to the Chinese nation, is genuine and deep-seated, and that he was also quite convinced that the Chinese Government could, if it pleased, carry out its threat of developing cultivation to any extent. On the other hand, he believed that so strong was the popular feeling on the subject, that if Britain would give up the opium revenue and suppress the cultivation in India the Chinese Government would have no difficulty in suppressing it in China, except in the Province of Yu-nan, where its authority is in abeyance?”—No, I do not agree with the latter part. I more or less protested—“protest” would not have been a proper word for me to have used at the time—but I differed from him in opinion, and I have elsewhere recorded the difference of my opinion as to the power of the Chinese Government in the matter. The Chinese Government was not so circumstanced, and has not been for very many years. Allow me to refer you to the correspondence of Captain Elliot in the year 1836. Even at that time you will find a Chinese Minister,—the one who proposed the legalisation of it,—admitting two things: that opium is necessary to the Chinese, and that the Government really could not stop it. You will find it in this great Blue Book of 1840.

1364. Your reply refers to the latter part of what I read?—Yes.

1365. The first part is as to the genuineness of their abhorrence, and their desire to get rid of it?—Well, I do not think the abhorrence, as I have stated in my evidence, is so universal as is supposed. I say that there must be a very large number of Chinese who do abhor it, but just in the way that there is in Britain a great number of people, as you said just now, who abhor drink and the notion of drink.

1366. May I just read you these words again: “Sir Rutherford Alcock said that he had no doubt that the abhorrence expressed by the Government and people of China for opium, as destructive to the Chinese nation, is genuine and deep-seated.” My question is, do you agree with Sir Rutherford Alcock that the Government of China had this deep-seated and genuine abhorrence?—I think it is too sweeping a statement.

1367. Of course you know that Sir Rutherford Alcock gave evidence in this country a year later?—Yes.

1368. What I have just read was in 1870. In 1871 he gave evidence in this country, and it is somewhat in the same line. I want just to ask you if you agree. He quoted, in giving evidence here, a despatch that he had written on this subject, and in which he uses these words: It is one of the Chinese mandarins uses these words, that “he believed the extension of this pernicious habit was mainly due to the alacrity with which foreigners supplied the poison for their own profit, perfectly regardless of the irreparable injury inflicted, and naturally they felt hostile to all concerned in such a traffic.” Do you agree with that?—I think it is too sweeping again. Indeed, what I have already said points the other way.

1369. Well, then in answer to further questions, Sir Rutherford Alcock said: “I think it will be seen the substance of the whole is this: that there is a very large and increasing cultivation of the poppy in China, and that the Chinese Government are seriously contemplating (if they cannot come to any terms of arrangement with the British Government for restricting the area of growth in India, and either gradually or suddenly putting an end to its importation, as they think they have the power to do), the cultivation without stint in China and producing opium at a much cheaper rate. Having done that they think they will afterwards be able to stamp out the opium produce among themselves.” I do not ask you whether you agree as to their power; but do you agree that that indicates some degree of desire on their part to do so?—No. I have heard the proposition more than once from Chinese, but I do not believe in its seriousness; without charging them with insincerity as regards their desire to see such a result. I am perfectly satisfied no Chinese that ever spoke to me in

that way ever believed that the Government could do it, or that such a result was obtainable. Just think: we keep on talking of opium as if the whole question, dated from the time we first went to war with China, but all those propositions really were discussed by the Chinese themselves long before we had any collision with them at all.

1370. Then a little further on he said:—"My own conviction is firm that whatever degree of honesty may be attributed to the officials and to the central Government, there is that at work in their minds, that they would not hesitate one moment to-morrow, if they could, to enter into any arrangement with the British Government and say, 'Let our revenue go, we care nothing about it. What we want is to stop the consumption of opium, which we conceive is impoverishing the country, and demoralising and brutalising our people.'" Do I gather that you think they had misled Sir Rutherford Alcock?—I cannot answer that with one word. The Chinese, like ourselves, have a very great facility of generalisation when they come to discuss moral questions; but I am very much astonished,—it is years since I read that, which I must have done,—I am very much astonished at its having so impressed Sir Rutherford Alcock, who had been five-and-twenty years in the country.

1371. I will only trouble you with one more, which has a bearing on trade. He said (as regards the bearing upon the Government of China. "If I had been enabled during the recent revision of the Treaty to hold out any distinct promise or assurance to them, that both as regarded missionaries and opium, which are their two great grievances, something should be done more or less restrictive that would meet their wishes, I believe that I might have got any facilities for our trade that I had chosen to demand. My great difficulty was that I could offer them nothing in either direction"?—No, nor in any direction, he might have added. Our grand difficulty with China is that we have never anything to offer. I do not know myself what his conviction points to after he had been engaged two years in the revision. He must have traversed most of the ground possible, but I cannot imagine what Sir Rutherford Alcock supposes he would have got if he could have given up opium and missionaries; one is about as practicable as the other; but what he would have got in the way of trade I cannot imagine.

1372. His idea was that if he could have given up opium, he could have got great facilities for trade. You do not agree with that?—I do not, because of this: they could not have afforded then to give up the abnormal taxation which overspread the country, and which there were hundreds upon hundreds of offices to

The witness withdrew.

Mr. STEWART LOCKHART called in and examined.

1375. (Chairman.) You are, I believe, the Registrar-General, or, in other words, the Protector of the Chinese in Hong Kong?—Yes.

1376. I believe that you have resided in Hong Kong for 14 years?—14 years.

1377. I think you have also resided in Canton, and also in the interior—in the Kuang-Tung Province?—I have.

1378. I believe that you are acquainted with the Chinese language, both to speak it and to read it; and of course your position brings you into close contact with the natives of all classes, both high and low?—Yes.

1379. In fact your post constitutes you as the channel of communication between the Government and the Chinese population of Hong Kong?—It does.

1380. Well, now, can you from your extensive experience give us your opinion as to the state of Chinese opinion in regard to the opium habit, looking at the state of things not only among the working classes, but also the merchants, the literati, the official classes, and also can you tell us what you saw during your sojourn in the interior, which would give you an opportunity of forming an opinion as to how the Chinese regard this question?—As regards Chinese popular opinion in respect to the opium habit, it is decidedly against it. There is a common Cantonese saying which sums up rather appositely "The Ten Cannots" with regard to the opium sot. It says, "The Ten Cannots regarding the Opium Smoker":—"He cannot: (1) give

collect. The real embarrassment of trade lay in these offices, and they could not have given them up, even if you had taken away opium and missionaries, or anything else you pleased to name at the time.

1373. (Chairman.) Are these local tolls levied at different points?—They are abnormal. Mr. Lay calls the collection of this tax, the *li-kin*, a war tax, and at one time that would have been more or less a correct term to employ. The word means, literally, one per mille. It is the thousandth part, the *li* is the thousandth part, of what we call in foreign commerce the tael (the ounce); and *kin* is gold, and *li-kin*,—this one per mille upon trade,—is something like our income tax; a tax put on to meet some extraordinary emergency. The disturbances of the country were perplexing their Treasury very much before the rebellion broke out. Then all through the rebellion and up to a late date, if not to this moment, they were perplexed as to finding means at all; and the rebellion itself—which lasted—the rebellion proper lasted—from 1852 to 1864, and then prolonged itself in different directions,—threw upon them an extraordinary expenditure, while the whole of their normal apparatus was disorganised; and, therefore, they have been more or less obliged to keep up this system of irregular taxation. The whole country is dotted with these offices. They do not obtain on the spot,—the authorities do not obtain,—half of what is collected; and you will see in the Appendix to my Report on the Chefoo Agreement [presented to the late Earl of Derby], in 1877, two State papers, in which the Central Government bitterly complains that it cannot get returns from the provinces upon these very questions. I think, sir, if I may return to the question of my respected Chief's remarks, Sir Rutherford Alcock was rather viewing the situation throughout as if the Central Government, with the power of the Central Government—which is immense when the Emperor is in full blow—was very much more confirmed than it really was. It had been terribly disorganised by the rebellion, and at the time he was speaking China had had seven years of a female Regency, [1869.]

1374. (Mr. Wilson.) Sir Thomas, there are a great many more statements of the same kind; I have got five or six of them more noted; but I have gathered sufficiently that your opinion does not agree with him, and I will not pursue that further?—Of course, I am exceedingly unwilling to say that I disagree with a gentleman under whom I served for very many years, and whose Secretary of Legation I was; but I think that in those passages which you have read, there is an evidence of a little over-readiness to measure the situation favourably, which I am the more astonished at, because on occasion Sir Rutherford Alcock certainly showed that he perfectly understood its difficulties.

"up the habit; (2) enjoy sleep; (3) wait for his turn when sharing his pipe with his friends; (4) rise early; (5) be cured if sick; (6) help relations in need; (7) enjoy wealth; (8) plan anything; (9) get credit even when an old customer; (10) walk any long distance." That, I think, sums up the popular view of the Chinese with regard to the opium habit.

1381. Well then, and that opinion is shared by high and low?—I should say it represents popular opinion on the subject.

1382. Well, now, what was the result of your own observations with regard to the effect of opium, upon those who resort to the use of opium?—I have seen moderate smokers; and I have also seen smokers who certainly took the drug to excess. As regards the moderate smokers, it did not seem to affect them much, if at all, physically, and certainly not at all mentally. With regard to those who took it to excess, from outward appearances they certainly were affected physically, but in my own communications with them I never saw any trace of their being affected mentally.

1383. Do you believe in the possibility of a moderate consumption of opium?—I do. I have seen people consume opium who do not indulge in it to excess. But of course, there is the danger of proceeding from moderation to excess.

1384. Well, now, turning to the effect of the opium trade on the attitude of the Chinese towards our Government, and as it affects their general opinion of us, what

Sir
T. F. Wade,
G.C.M.G.,
K.C.B.

15 Sept. 1893.

Mr. S.
Lockart.

Mr. S.
Lockhart.

15 Sept. 1893

do you say on that point?—I have noticed in the newspapers that some of the witnesses who have appeared before the Opium Commission have stated that the British are hated by the Chinese on account of this opium question. So far as my experience goes, I have never found any hatred expressed of the British on that account.

1385. Do you consider that the British commerce in other articles of trade is prejudicially affected by the existence of the trade in opium between India and China?—I doubt whether that is so; because if the Chinese did not spend their money on the opium from India, they would spend it on the opium which they grow themselves, and which, as is well known, is increasing every year.

1386. Speaking of Hong Kong, what have you to tell us with regard to the facilities for obtaining supplies of opium there, and with regard to the proportion of the Chinese population in Hong Kong who are consumers of opium?—I drew up a return some time ago, under directions from the Governor of Hong Kong, with regard to the number of opium divans, or as they are very often erroneously called, "opium dens." I think it was in connexion with some question that had been asked by a Member of Parliament, calling attention to the excessive number of opium divans in Hong Kong. I had inquiries made, and drew up a table, the figures of which I have here.

1387. Please give the results to us?—The number of public-houses or canteens per 1,000 of the total European and American population is 2·80. The number of opium divans per 1,000 of the total Chinese land population is about 0·86 (8·56 per 10,000). That is, that the public-houses in Hong Kong for the public supply of drink to Europeans are proportionately more numerous than the opium divans for the supply of opium to Chinese.

1388. Now, we have had comparisons made by witnesses who have appeared before us of the relative results of the indulgence in opium and indulgence in spirituous liquor, and we have been told by many witnesses that opium is far more prejudicial in its effects than liquor, at any rate, if moderately consumed. What would you say to us as to the relative influence of opium and liquor upon consumers?—Comparing the opium sot and the drunkard, I should say the drunkard is a man who makes himself a much greater nuisance to society than an opium sot. The opium sot, although he may be affecting himself physically, and perhaps mentally, does not make himself a nuisance to society generally; whereas the drunkard, as is well known, is not only a nuisance to his immediate surroundings, but very often to society in general.

1389. In relation to the death rate at Hong Kong, would you be able to say that there was any distinct evidence that the returns are more unfavourable in the case of those who are consumers of opium than in the average of the population?—The mortality statistics do not tend to show that any deaths result from opium-smoking. I do not think that I have ever had a return of a death registered as directly arising from opium-smoking. Of course, there are sometimes cases of opium poisoning by swallowing opium; in fact, that is not an uncommon form of getting rid of life. But so far as the death-rate of the Chinese is concerned in Hong Kong it is improving; in 1888, the death-rate among the Chinese per 1,000 was 32·22; in 1892, it was 21·36; and there is nothing in the death statistics to show that opium is the cause of a high mortality in the Colony. Of course, I cannot say to what extent diseases which people die from may have been liable to be caught on account of indulgence in the habit of opium smoking.

1390. I believe there is a system of raising revenue in Hong Kong and in the Straits Settlements, and in other British dependencies, by what are known as opium farms?—Yes.

1391. Will you describe that system to us?—The opium farm is let to a man for a certain figure, and he has the monopoly, and pays to the Government a certain fee every year for the privilege of preparing and selling prepared opium. This monopoly, I think, does not tend in any way to increase the consumption of opium; in fact, I think that the system rather tends to decrease the consumption, because the opium farmer, being practically a monopolist, is able to keep up the price of opium; and if people want his opium they have to pay a higher figure for it than they perhaps would have to do if the privilege of preparing opium was not confined to one person, as at present, but granted to several people.

1392. Do you think that under a system of free trade in the supply of opium, the consumption of opium would be more extensive than it is under the present system?—I think so. The opium would be cheaper, and people being able to get it more cheaply would almost certainly consume more. I think in many cases a man is a moderate smoker of necessity, because he has not the money to pay for more, much as he might like to have it. If there was a free trade in this matter, opium would become much cheaper, and people would be able to indulge themselves more freely in it than at present.

1393. Do you think it would be possible or politic on the part of the Government of Hong Kong to issue an edict of total prohibition of the consumption of opium?—From a revenue point of view it would be injurious to the Colony, and I do not think it would decrease consumption. It is the desire of the Government to limit consumption as far as it possibly can consistently with the raising of revenue.

1394. Do you think that, if the use of opium in any form was forbidden, you could enforce such a prohibition?—I do not think it would be possible any more than a prohibition of drink in this country could be enforced. People would smoke. I am afraid the habit has become so ingrained in the Chinese that they must have their opium.

1395. (*Sir W. Roberts.*) I was going to ask Mr. Lockhart a question: What is the Chinese population of Hong Kong?—The Chinese population is about, in round figures, 220,000; the total population of the Colony being, in round figures, 231,000.

1396. That is, there are about 10,000 Europeans?—And 220,000 Chinese.

1397. Are the Chinese inhabitants of Hong Kong there with their wives and children in their full family relations?—There is Chinese family life in Hong Kong, and it is increasing; but non-family life is more common than family life among the Chinese in the Colony.

1398. Then they are to some extent immigrants?—Certainly. The close proximity of the Colony to the mainland of China, facilitates the progress of the Chinese to and fro.

1399. Now, opium smoking is prevalent among the Chinese people?—I think the term "prevalent" may certainly be applied to it.

1400. May one say one-half of the adults smoke opium?—I should not like to commit myself to any statement of that kind. I think it is rather rash to commit oneself to any statement as to figures which are not based on ascertained facts.

1401. But you think it might be described as prevalent?—I think it is prevalent.

1402. But still nothing like so prevalent as the use of alcoholic stimulants amongst the adults in this country?—I do not think so.

1403. Some are moderate and some are immoderate?—Some are moderate and some are immoderate.

1404. Can you give us any idea—I do not want precise numbers—what is the proportion between the moderate users, those who do not injure themselves, and the immoderate users, those who do injure themselves?—In Hong Kong the moderate smokers are, so far as my experience goes, more numerous than the immoderate smokers.

1405. Then you can only speak of it as a bare majority?—I cannot give precise figures.

1406. That is to say you could not say now, as in this country we might roughly say, that out of 100 people who use alcoholic liquors there are certainly not more than ten who could be classed as intemperate?—It is difficult to give figures of that kind with regard to Hong Kong, which has more or less of a floating population. I should not like to commit myself beyond what I have already stated, that the moderate smoker is much more common than the immoderate smoker, so far as my experience goes.

1407. Your impression is then that there are a great many that go to excess and injure themselves?—What I said was that the moderate smoker, the man who cannot afford to go to excess, so far as my experience goes, is more numerous than the man who goes to excess. Some of course do go to excess and injure themselves.

1408. You cannot express yourself more exactly than that?—No, I cannot express myself more exactly.

1409. (*Sir J. Lyall.*) Do you think that the only people who are moderate are the men who cannot afford it?—No, I would not say that; but I think the fact of their not being able to afford it operates to restrain many from becoming immoderate consumers.

1410. Makes the common working men?—Makes them more moderate than perhaps they otherwise would be. But I do not say that men who have wealth and who smoke opium are not sometimes moderate also.

1411. (*Sir W. Roberts.*) But you would not even venture to say that the opium sot was more common among opium smokers than the drunkard is among spirit drinkers or the users of alcoholic drinks?—I should not like to say so.

1412. Is the opium-smoking increasing in Hong Kong?—No, I do not think there is anything to show that it is increasing.

1413. It is about stationary?—I think it is pretty much about the same.

1414. Then the extraordinary improvement in the death-rates in Hong Kong, from 32·21 in 1888 to 21·36 in 1892 is quite independent of any fluctuation in what one may call the opium rate?—I should not think the opium question affected the death-rate very much one way or the other. I think the improved sanitary works have more to do with the improved death-rate than anything to do with opium.

1415. As far as you know, opium has not affected the death-rate then?—So far as the mortality returns go to show, we have no deaths attributed to opium-smoking.

1416. I suppose that there cannot be any exact statistics as to the consumption of opium in Hong Kong per head of the population?—I should think it would be possible to obtain accurate statistics of the local consumption of the Colony.

1417. It could not be obtained?—Yes, under the present system. I think I could obtain figures and furnish the Commission with them if it were considered desirable.

1418. The consumption per head of the Chinese?—Every chest of opium that arrives in Hong Kong has to be accounted for; so that it is possible to show the amount that is consumed locally and the amount that is exported. If it be considered desirable those figures might be obtained.

1419. I think it might be interesting to have that information. And, of course, you have also vital statistics collected regularly; the death-rate could be got?—Yes. My own annual report gives the death-rate, and the various diseases of which the people die.

1420. The point would simply be this, whether there is any correspondence between the death-rate and the opium rate; whether, when the opium rate rises—for I have no doubt there will be a certain oscillation, whether the death-rate oscillates correspondingly?—I do not think there has been any correspondence between the death-rate and the opium rate.

1421. (*Mr. Wilson.*) Would you just give us some general idea of what the position and duty of Protector of the Chinese is?—All Chinese communications with the Government pass through his hands; all translations of Chinese documents are made in his department; and on questions affecting the native community, which arise from time to time, he is generally the officer who is consulted and advises.

1422. (*Chairman.*) Perhaps you might point out that the appointment of Governor of Hong Kong is hardly ever made from among those who have had previous acquaintance with the Chinese population?—Quite so.

1423. As a general rule, the Governor is one selected from the general Colonial service, and he goes to Hong Kong without a knowledge of the language, and greatly needing the services of an officer who has that special knowledge?—The Governor of the Colony is as a rule quite unacquainted with the Chinese, having had no special opportunities of learning Chinese, or becoming acquainted with the habits of the Chinese. Seeing that the Chinese constitute by far the largest portion of the population, it is considered necessary to have an officer who is acquainted with their language, and with their customs, whom they may consult, and who may to be of assistance to

the Government in dealing with native affairs. In addition to these duties, he has also to perform the duties of registrar of births, deaths, and marriages.

1424. (*Mr. Wilson.*) Of the Chinese?—Of the whole community including the Chinese.

1425. (*Sir W. Roberts.*) I should like to ask one question more. Did you ever know any of the Europeans in Hong Kong take to the opium-smoking habit?—Never in my experience.

1426. (*Mr. Mowbray.*) Is there much Chinese opium consumed in Hong Kong?—No, I do not think so.

1427. Any?—I doubt whether there is any.

1428. (*Mr. Pease.*) What is the system of licensing of the two classes of houses you alluded to?—Of the opium divans?

1429. Of the opium divans and the spirit houses? Are they licensed? By the same authority? Under similar circumstances?—The opium divans are licensed by the opium farmer; and the public-houses are licensed in the same way as they are in this country—by the justices.

1430. Is it not possible that the opium farmer may find it to his advantage to do his business in a smaller number of establishments than the business would have been done in if they had been licensed as the public-houses are?—I should say the opium farmer would open as many houses as he thought would pay. I should think that would be his guiding principle.

1431. I say he might find it to his interest to do his business in a smaller number of establishments, less expense than in a great number?—If he found that a larger number of houses paid, he would open them at once.

1432. If the licensing authority was all in one hand in our towns and villages in this country, there would be a very great decrease in the number of public-houses?—The opium farmer grants licences to suit the requirements of the place. In that return that I have handed in, I have given the number of people frequenting the opium divans.

1433. I was only wanting to point out that the system of licensing may have some effect on the numbers of houses open, and the different classes?—I mentioned the number of houses, to show that they were not so excessive as seemed to be the opinion of certain people.

1434. When a man becomes an opium smoker, he requires to have his pipe at certain intervals, does he not?—I believe that depends a great deal upon the degree to which he has become under the influence of the habit. I should say the moderate man could go without his pipe without having it at regular intervals, as long as he could get it at some time.

1435. What do you mean by getting it at some time?—Well, as long as he got his pipe, say when his work was over, or in the evening, as the case may be, whereas a man who is an opium sot must have his pipe at regular intervals.

1436. If you watched the case of persons who have taken opium at regular intervals for two or three years, would you say that they had not become more confirmed in the habit, than when you first knew them?—I have now in my mind a case where I am sure the smoker has not become more confirmed in the habit; in fact, if anything, he does not smoke quite so much.

1437. Do you think those cases are common?—That I could not say.

1438. (*Sir J. Lyall.*) A great many of these opium smokers are very much like the British liquor drinkers, that is, they know more or less how far they can go, how much they can carry, perhaps, and are prudent enough not to go beyond that?—Well, I should think that must influence them, especially workmen, who know that if they go beyond a certain state, they will not be fit for their work. I should think prudential considerations of that kind do occur to them.

1439. Do any number of Chinese drink spirits in Hong Kong?—They do drink spirits. The drinking of spirits—of their own native spirits—is pretty general among the Chinese.

1440. Did you ever see drunkenness?—Very seldom, indeed. A drunken Chinaman is a very rare sight

Mr. S.
Lockart.

15 Sept. 1893.

Mr. S.
Lockhart.

15 Sept. 1893.

1441. The same men, you think, drink spirits as smoke opium?—I think the drinking of spirits is far more general than the smoking of opium. They very often take spirits with their meals in the ordinary way, just as we do ourselves.

1442. It is spirit made from rice?—Yes, spirit made from rice.

1443. Like the Japanese sake?—Very much the same. It is commonly known by the name of Samshoo.

The witness withdrew.

Dr.

T. I. Rowell,
M.D., C.M.G.

Dr. T. IRVINE ROWELL, M.D., C.M.G., called in and examined.

1444. (Chairman.) Have you been a medical officer of the Government?—I have; in the Straits Settlements.

1445. How many years were you there?—I have been there altogether for about 25 years.

1446. Are you still in the service?—No, I am now retired.

1447. (Sir W. Roberts.) In your district, Singapore, I suppose, is the chief place?—Singapore, yes.

1448. The population there consists of what elements?—Roughly, I should think about 150,000 or 160,000.

1449. And what nationalities?—Principally Chinese but also Malays and natives of India.

1450. Sixty or eighty per cent. would be Chinese?—Quite so.

1451. Were the Chinese there with their wives and families, or were they immigrants?—Partly both. There are some who are called "Straits born Chinese"—they live there with their families; but there is a large number of immigrants also.

1452. Were they generally opium smokers?—No, I should not say that; not generally.

1453. Not the Chinese?—Not generally.

1454. Then the opium smoker was the exception?—Of course there was a large number of opium smokers, but those I saw principally in the hospitals.

1455. Then amongst the working population of Chinese in Singapore would you recognise the general prevalence of the opium habit?—No; I should not say so. I knew cases here and there; but I do not think it was a general habit.

1456. I see that you were surgeon in charge of the criminal prison and the pauper hospital containing a very large number of inmates. Did you often meet these opium smokers as patients?—I should think that of the admissions to the pauper hospital about 30 or 40 per cent. were opium smokers.

1457. Did you attribute their poverty largely to the habit of opium-smoking?—No, not at all; I think it was due to disease. They take to opium through originally having fallen victims to disease. A great many of them are poor destitute Chinamen, and they fall victims to disease, and finding relief from opium-smoking they continue the habit.

1458. Then the opium habit was, so to speak, an incident in their lives?—Yes.

1459. And an incident in their case; not a cause of their illness?—No; it was taken more as a remedy.

1460. Then did you see any cases of sickness produced by the opium habit; by smoking opium?—Some of them took it to excess, but I should not say that it was at all general. The generality were certainly moderate.

1461. Of the opium smokers?—Yes.

1462. But you did meet with some who had injured their health directly by opium?—Well, I should not say that; I do not think so.

1463. You would not say positively. I mean you could not assert it positively?—No.

1464. Now, amongst the inmates of the criminal prison did you meet with opium smokers?—Yes, there was a certain number of inmates who were opium smokers, but I do not think the proportion was very large.

1465. A certain number of the Chinese?—Yes, of the Chinese.

1466. Was their crime often connected with their habit of smoking opium?—No, I do not think so as a rule.

1467. It was not connected?—Not as a rule.

1468. In that respect it differed then, as far as your experience goes, from the irrepressible drunkard of this country?—The opium smoker is not so bad as the drunkard by a long way.

1469. Was opium allowed to be smoked in the prison?—If, when a prisoner came in, he was found to be an opium smoker, and his health gave way, and the medical officer considered that it was through the want of the opium, he was admitted to hospital, and got a certain amount of the opium to smoke until his health got better again; then he was sent out to work in the prison in the ordinary way.

1470. Were you afraid of suddenly stopping the opium smoker from his pipe when he came to the prison?—In certain cases where they were used to opium in excess, if it was suddenly withdrawn, it was very apt to lead to serious symptoms.

1471. And was that the case with regard to the ordinary run of opium smokers who, I presume, would be temperate smokers?—No, it was the exception.

1472. Then, you could cut it off without any injury at all?—Yes, and I made a series of experiments with the result of finding that out; and I found that the larger proportion of the men from whom the opium was withdrawn gained weight, that a certain amount remained stationary, and that a smaller proportion lost weight.

1473. Did you see any symptoms of this terrible craving that has been described to us when the moderate opium smoker was deprived of his pipe?—No, never.

1474. As far as you know, he was not worse off in that respect than a tobacco smoker?—No, certainly not.

1475. I am speaking of habitual moderate smokers of opium?—Yes, quite so.

1476. Have you formed any judgment regarding the coolies who came to the Straits Settlements and who were opium smokers; were they as efficient and as strong and as healthy as those who did not smoke opium?—No; I should say not, because most of them had taken, as I said before, to opium simply to relieve their suffering. They were not strong men originally—they all either suffered from cough or, perhaps, a little diarrhoea, or, perhaps, a little fever, and they took to opium-smoking, and, having found relief, they continued the habit. And, as they were diseased, you could not say they were as strong as the healthy men.

1477. Did not your experience lead you to suppose that there were a good many Chinese who took to opium-smoking without being induced to do so by disease?—I do not think so.

1478. Your experience was confined rather to that class which you have described?—Yes.

1479. Granting that they had been through their ailments led to smoke opium, as I suppose a good many were, did they after regaining health, in curable cases, still go on smoking the opium?—Yes, as a rule.

1480. Do you think that these maintained their efficiency as workmen and as healthy men?—Yes; as long as they did not exceed in any way.

1481. I gather from you that the moderate opium smoker is not really in a worse position in regard to health than the moderate tobacco smoker?—Little worse. I may add that a great many lepers are opium smokers. The habit gives them relief, and is a good thing for them.

1482. Do I understand you to say in your note that you "have known some of the most successful and most level-headed, the most clever of the Chinese merchants in the Colony, to be confirmed but moderate opium smokers"?—Yes, that is so. Their use of opium has been moderate.

1483. Did it ever pass into your mind that the moderate use of opium in cases of that sort—I mean men who are obliged to gain their living by their brains—that it helped them?—I think so.

1484. In your opinion, it was a positive assistance to them?—I think so.

1485. And I suppose you would regard that as a set-off in a certain degree to the mischief it did in other

directions?—Yes; some of those I referred to were men who took to opium for some special reason; they did not take it as one takes to a glass of alcoholic liquor, they took it for some special reason—for some ailment that was the matter with them, either for a cough, or something of that kind, but it did not affect their general health; they were able to attend to their business, and they did much better with opium than they could have done without it.

1486. Apparently it may be said of opium, what many amongst ourselves feel—and I suppose it is the general view expressed or unexpressed in regard to the alcohol habit, that the evil and the good balance themselves more or less completely, and you have to set the good against the bad; would you be disposed to consider of the opium habit, as you have seen it passing before your eyes at Singapore, that the good it did counter-balanced the evil?—I see much more to shock one at home from the effects of alcohol than I have ever done in the East from the effects of opium.

1487. You mean the balance is rather more clearly on the side of opium?—On the side of opium.

1488. (*Mr. Wilson.*) Just upon this last point:—Did I understand you, in reply to Sir William Roberts, to say that you thought that opium-smoking in moderation had no more injurious effects than tobacco smoking in moderation—is that what I gather?—Little more.

1489. Then you said also—I think I understood you to say, in reply to a question of Sir William Roberts—that the opium smokers were not so healthy as other people, not so strong as labourers, because there was usually disease superadded; do I understand that that is your evidence?—Quite so.

1490. And the disease you mentioned was a little fever or a cough?—But those were only two causes; there are a great many causes which induce men to take opium—there is leprosy for instance, there is diarrhoea, there is malaria, there is chronic rheumatism, pains in the bones—this last being a very common cause of men taking to opium smoking, and it relieves them in a way that opium in any other form would not do.

1491. But you mentioned a cough or a little fever?—I meant a chronic cough—an obstinate cough, or fever.

1492. Then, in reference to the prisoners when in hospital, you allowed them under certain circumstances to smoke; was that rather as what you may call a luxury while in hospital, or was it a remedy?—I think Sir William Roberts was asking me with regard to the jail—the prisoners in the jail.

1493. In the case of prisoners in the jail hospital?—It was considered certainly as a luxury; but in certain cases it was a necessity.

The witness withdrew.

Rev. ALEXANDER LANGMAN called in and examined.

1509. (*Chairman.*) You are a missionary, are you not?—Yes, my Lord.

1510. And how many years have you been in that vocation?—I have been eight years in China, in the Cheh-kiang province.

1511. Do you agree with the opinion expressed by the missionaries who have previously given evidence on the opium question?—My experience has been, my Lord, that all I have heard expressed by missionaries in this room with regard to opium in China is perfectly true, and is not at all exaggerated.

1512. I understand that you wish to put in a letter on the subject from a native evangelist?—This is a letter I received only three weeks since. It is written in Chinese, but I have made a rough translation of it. It was, I may state, quite unsolicited [*original of the letter handed to the Commissioners*], and I have left the translation as much in the Chinese idiom as possible, and I should like to read it as an expression of the feeling of the Chinese Christians, and how they regard the opium.

1513. Just as a matter of curiosity, how is the original letter written, is it stamped?—No, it is written with the brush—the small pencil as they call it, an otter hair brush. The writer says: “Pastor Gilmer tells me that “in England some are discussing at the present time “the abolition of Chinese opium calamity, may God “bestow great grace, and the mighty power of the “Holy Spirit, so that willingly Chinese people may be

1494. In some cases it was allowed as a luxury to a sick prisoner; in other cases you actually prescribed as beneficial to him?—Yes, and in the hospitals in the same way.

1495. (*Mr. Mowbray.*) You mean as beneficial to him because he had been in the habit of taking it, and that it was not good for his health to be suddenly deprived of it?—Yes.

1496. Does the Government of the Straits Settlements derive a large revenue from the opium traffic?—Yes, but I really could not tell you how much.

1497. (*Mr. Pease.*) There is, I believe, an anti-opium society in Singapore, is there not?—Not I think in my time, but I would not be positive.

1498 and 1499. Among the Chinese?—I was not aware of one existing among the Chinese when I resided there.

1500. I have an address to all lovers of virtue in Great Britain signed by Shao K'ang-chi, Jung Lin, Hsueh P'ei-cheing, and P'an Chen. Do you know any of those names?—No.

1501. Perhaps not as I read them, at any rate?—They may be connected with one of the missionary societies.

1502. They send an address in which they use very strong terms: “The danger of opium”?—I think opium gets credit for a great deal that is not due to it, and there are miserable wretches in Singapore whose condition is all put down to opium when it is not due to opium at all, but to disease.

1503. In 1891 an address, presented to the House of Commons, containing 1,100 signatures, was presented to Parliament from Singapore?—That is since I left. I know that the American missionaries have been moving in the matter.

1504. Opium is a very important article of revenue, is it not, to the Colony of Singapore?—I think so; yes.

1505. Do you know what proportion it bears to the whole of the revenue of the Colony?—I do not.

1506. It is put before me that half the revenue of Singapore is derived from the opium farm, so that in that case the Government have a very large interest in the maintenance of the traffic?—Yes; it would be so.

1507. You do not know whether that is correct or not?—I do not know whether that is correct or not.

1508. (*Sir W. Roberts.*) Is there not a large amount of opium diverted from some of the Chinese ports to the Straits—some of the Indian opium, I mean?—Yes, that may be so.

“saved out of their bitterness, this opium-smoking “injury to men, if not with the personal eye seen no “man could believe, this evil goes beyond water, fire, “robbers and thieves; because of it homes and possessions are scattered, wives are left, and sons dispersed. “By reason of opium there is adultery and robbery, all “crimes and wickedness from this source come. The “selling of wives, and selling of sons, because of this is “an established fact. Eaters of opium are day by day “increasing greatly, and silver money is daily seen less; “this evil has come upon China, and has spread beyond all previous calamity! The holy doctrine of “Jesus is difficult to propagate, one half the reason is “because of opium. Much is being said about the “foreigner bringing opium, which injures our bodies, “and again bringing the Jesus doctrine to save our “souls. The foreign country forbids opium entering “the mouth, this is extremely meritorious. We pray “God to bestow the Holy Spirit with power upon those “in authority in England, that teachers, magistrates, “and Queen may make an end of this business, and all “men will be delighted; to forbid opium entering the “mouth is to save our country's people and give them “happiness, then shall we proclaim the happy sound “(the Gospel), repent and put away sin from the body “and heart, with all wickedness. Establish rectitude “and call upon God; but the present state is lamentable, opium is prevalent and the saving doctrine “prosper not. That was written on the 28th day of “the third Chinese moon.”

*Dr.
T. I. Rowell,
M.D., C.M.G.*

15 Sept. 1893.

*Rev. A.
Langman.*

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Langman.

15 Sept. 1893.

1514. You have heard what has been urged for the consideration of the Commission with reference to the animosity to foreigners, which it is alleged arises from the British connexion with the opium traffic, and you are aware of the evidence which has been given with reference to the reasons assigned by the Chinese to the introduction and increase of the poppy culture in China; do you agree generally with the evidence that has been given by other missionaries upon these subjects?—My own opinion is quite established that the animosity shown by the Chinese to foreigners, and to Englishmen especially, which I have experienced myself, has been chiefly on the ground of our connexion with opium. It was the first thing which we had to attempt to do—to satisfy the minds of the people, with whom we came in contact that we had nothing to do with the bringing of opium into China. As far as I could find out, and in districts where no foreigners had ever resided I have gone, and I have had the same intense hatred shown because of opium; and I believe that when we were in trouble—at the time of the opium riots in 1891—from the way I have heard many expressing themselves, when I have been in great excited crowds which had gathered discussing whether they should come and pull down the foreigners' houses, and turn them out and kill them, this was the first thing, and the chief thing that they accused us of. We could readily enough answer their questions as to the foolish stories about stealing their children, and using their eyes as medicine, and such things as that; it did not take long to disabuse their minds of these things, but the opium they said—the opium. And also when we were preaching to crowds, when there were no disturbances anticipated—in our chapel we could easily hold 150 people—when preaching the Gospel doctrines that we had gone to preach and making no reference at all to any other side issue, one or another would rise up in the crowd and say: “Come away, and do not listen to the foreign devil;” “do not we know enough of him; he has brought the “opium to us.” Others would call us again “opium devils,” and such like; so that in my own mind I am firmly convinced the people are fully persuaded that we alone are responsible for the condition of their country at the present time, and their being compelled to admit the opium.

1515. (*Sir J. Lyall.*) Apart from the opium, would not the missionary be likely to be received with great disfavour in China in any case; I mean to say, is he received with great disfavour as a Mohammedan missionary, or a Chinese missionary, would be received in England, if he came to try and persuade us that all our religion and all our morality was wrong, and if he tried to set up small communities partly under the protection of foreign Governments which differed in customs and in everything else from the rest of the Chinese; apart from opium, is it possible that the missionary would not be a very unpopular character with the patriotic Chinaman?—I have not had the opportunity of experience in that way.

1516. If that is the case—and I do not think you can deny it—does that not throw some doubt in your mind upon the genuineness of this outcry about opium. Is not the Chinaman very quick to see that you cannot answer this particular taunt, and therefore he multiplies it all over the whole country?—Yes, he is quick to see and quick to use it, because he knows it is true and we cannot answer it.

1517. Because he sees its effect upon you, and of course that will multiply all over the country?—It is true, and we cannot answer it.

1518. You cannot answer it?—You cannot answer it yourself; and as for missionaries coming to this country to preach other creeds they would have to conform to the law of this country, and they would be protected in that way.

1519. Would it not be excessively unpopular; would it not excite great animosity?—I hardly think so, because all missionaries who labour in China are treated as foreigners, and they experience the same animosity until the people learn where they have come from and what their object is, as I have seen. I have heard the mobs in China saying, “Bring evidence that you are “here for no other purpose than to preach morality “and virtuous doctrines to us.”

1520. (*Mr. Mowbray.*) Do you agree with the view of the Chinese that we are responsible for having introduced opium into China?—The history of the—

1521. I only want your own opinion; we have had the history of the question related to us from various

points of view, and we do not want to go through it again?—I can only say that I always had to concede what they accused us of, namely, that we English were the people who brought opium, and that we were the only people that brought opium when we entered the country.

1522. But you are quite aware that it is a disputable proposition?—From all the knowledge I could gain I never could dispute it to a Chinaman, because we were on the ground, and there were the facts before us; and in the province in which I have laboured for eight years they were thoroughly conversant with the history of the trade, and believed that opium was only brought from India, which is an English country as they called it, to their country.

1523. You have heard the evidence that has been given to-day, that it was introduced into China long before we introduced it?—Yes; when I have put that view forward in China, I have got this answer, “We “had it in China. China is a large nation, and we “required all the opium we had as medicine, and medicine only. Foreigner, you know very well that when “a man became addicted to opium he lost his head, “and many a head was taken off because a man was “found to be addicted to opium habit.” The smoking of opium was formerly against the law, but now it is not against the law, because our opium is prevalent.

1524. If the importation of opium from India into China were prohibited, and if at the same time Chinese opium were solely consumed in the country; then do you believe that the Chinese themselves would acquit us of the responsibility which they at present attach to us, and do you think that your labours would be lightened?—I do believe it, sir; I think our labours would be vastly helped. And I have often put the question to the Chinese, in discussing the matter, “How is it that you cultivate so much opium yourselves on all hands?” They laugh, and reply, “Our “opium which we produce is not so poisonous as the “opium which you give us. We will cultivate our own “and use it, and live the longer and have our silver to “ourselves.” I have known a mandarin to take his soldiers and go outside a city and cut down the poppies that have been growing round; that was six years ago.

1525. I notice that you have twice used the phrase, “And we will keep our silver to ourselves;” you are aware that that, of course, is one reason which is given for the hostility of the Chinese to the importation of opium?—Yes, because so much silver goes out of the country. There is one thing which I should like to remark, if I may be permitted, and that is in reference to the effect that opium has on the rising generation. There is a young man in connexion with our work and he had six children. He buried the whole six before each had reached the age of three years. One of those six—I think it was the fourth child—I myself had tried all I could to save, but the child died, and subsequently in speaking over the matter the man said to me, “How “can it be expected that I can rear my child; my “father was an opium smoker before I was born,” and his father died an opium smoker. I said to him, “Do “you really believe that? Does it affect the children?” He said, “All our people believe it.” I said nothing more to him, but it so fixed itself on my mind that I set myself to find out the feeling of the people in the district on this very question, and I found that it was a common saying, “Chih yu yen pu wli yang san tai”—“The opium smoker cannot see his third generation”—that is the way they put it.

1526. (*Mr. Wilson.*) I think you said you had been eight years in China?—Yes, sir.

1526a. During how many of those years have you had a sufficiently familiar knowledge of the language to be able to converse with the people, and to get from them their opinions at first hand?—After the first year. We have a course of study laid out for us, that takes two years, but after the first year we are in full communication for half the day, that is, in preaching and talking and mixing among the people for half the day. That continues for the second year, and after the second year we are supposed to be through our course of study of the Chinese language, and to give all our time amongst the people, so that for six full years I have had full liberty in the use of the language. But the course is limited to that length, because what we have got to study is not the literary aspect of the language, but simply the spoken language, so that we can make communications and read two or three books.

The witness withdrew.

Sir LEFEL GRIFFIN, K.C.S.I., called in and examined.

1527. (*Chairman.*) You have seen considerable service in India, I believe?—Yes.

1528. Would you tell us in what parts of India your experience has lain?—In the Punjab and Central India. The first 18 years of my service was in the Punjab, about half the time as secretary to the Government and the last part of it was as head of the administration in Central India.

1529. Did you throughout your service come practically into contact with the question that has been submitted to this Commission?—In the Punjab my contact with it was more general, but it is a subject to which I have always given a good deal of attention as many things I have published show; but in Central India I was more directly concerned with it, because I was the head of the whole opium revenue department of the Native States. The Agent of the Governor General is *ex officio* the opium agent for the whole of the Native States, including a great part of Rajputana.

1530. (*Sir J. Lyall.*) What is the system of the British Government in taxing opium grown in native States—what interference, or supervision over the cultivation do they exercise, if any?—Perhaps in a few words I had better explain the system—as briefly as I possibly can.

1531. (*Chairman.*) If you would, please. I should like to have it before us?—The opium agency in what is called Malwa, which contains all the opium-growing States of Central India, used to consist in a monopoly, but that was given up many years ago, and now it is only a system of passes. The Government has no concern whatever in the cultivation or in the manufacture of opium. Its headquarters are at Indore, and it has sub-agencies at Bhopal, Udaipur, Jaora, Chitor in Udaipur, for the Rajputana opium, Mandesore, which is in Gwalior, and Ratlam. The opium from these places is sent direct under pass to Bombay—all that is intended for export. The Indore agency is the central and the largest, and the number of chests which used to pass in my time through that agency in 1880 was very great. The average would be about 45,000 chests a year, though now it has I dare say diminished to something like 30,000 or 35,000, but the average used to be about 45,000 chests of 140 lbs. each in weight.

1532. (*Sir J. Lyall.*) You say that the Government does not interfere at all in the cultivation?—Not at all.

1533. Has the Government ever attempted to urge any native State to extend the cultivation within your knowledge?—No, on the contrary—well I may say distinctly “No” to that. It has not; but personally as the head of the administration I have had to try to interfere to a certain extent in the interests of good administration, because in 1882 and 1883, when there had been great over-production and the prices fell very much, all the native States wished to get the same amount of revenue that they had before, from a very much cheaper drug, so that there was a great deal of distress in consequence, and I interfered very considerably and got the rates reduced largely, especially in Gwalior.

1534. The rates on the cultivation?—The rates on opium land.

1535. In some of the Anti-Opium Society's memorials—some of the recent memorials and in evidence that has been given before the present Commission I have seen that there have been references to certain agreements, concessions, and payments which the British Government has made with, or to, some of these native States, and the argument in the memorials and in the evidence is that those concessions or payments are to increase the cultivation—to increase the out-turn of opium; can you tell us what is the purport of those?—Nothing of the kind has ever, practically, come under my notice.

1536. Are there any agreements with any native States to prevent their cultivating opium?—The cultivation of opium, is, as far as I am aware, perfectly free in every native State.

1537. In every native State?—How can we interfere?

1538. Q. Are there any concessions or payments, I mean that we make to them, to guard the revenue against smuggling or anything of that sort? What can those concessions and payments be in your opinion?—A. I do not know what they are; I am not acquainted with them. I do not think any such exist. If so they must be of so old a date that they have become obsolete. If you could tell me one I should be able to tell you at once if it were in force, but I do not remember anything of that sort. Opium cultivation in Native States is practically free in every way. Of course there is prevention against smuggling, but that is a question of our own revenue. The opium is entirely exported by rail, and when it has been weighed by us at the Central Office it does not leave our hands until it gets to the railway, and there it cannot be taken without a pass. It is sealed, moreover, and it does not leave the hands of our agents until it reaches Bombay. There is a good deal of smuggling, but that is a different question.

1539. How do the native States who produce opium raise their own opium revenue?—They raise their revenue in several ways. It is very difficult to say what proportion of their revenue comes from opium, but a very large part of it is so derived. The people of England are very little aware of the high rates opium land pays in native States. The best opium land is probably in Gwalior, Indore, and Ratlam. The highest rates in my experience are paid for opium land in Gwalior, where they go up to about Rs. 40 a beega. Taken roughly—a beega is equal to about half an acre—the revenue is about Rs. 80 an acre, or practically, you might say, 8l. an acre, because in native India the rupee has not depreciated at all; it buys just as much as it used to do.

1540. Do they have any Excise system too besides that?—Certainly, besides land revenue they have an export duty, which is very often from Rs. 25 to Rs. 50, chest. Perhaps Rs. 50 is too high, but from Rs. 20 to Rs. 40, say, they have also a tax on the opium water, the liquid opium, which is very much drunk by Rajputs and locally consumed. Besides there is the transit duty, which is very high, on opium, but that, I think, I swept away in all Central India.

1541. What would be the result if we were to stop the transit of opium from the native States through British territory?—In what way?

1542. What would be the result on the people of the native States and on the government of the native States?—You mean if you prohibit the export, not if you prohibited the cultivation?

1543. No; prohibit the export?—Of course, you can prohibit the export.

1544. But I mean what would be the result. I suppose it would kill the greater part of the cultivation?—Of course it would ruin the trade, if it was not supported by smuggling. It would ruin the native States and it would make them to a man disloyal to you. It would ruin the merchants, too, and would to a very great extent ruin the peasants. Opium is the life-blood of native India; it is the thing by which they get the whole of their spare surplus revenue. The whole of their pomp and state depends on their opium revenue in my part of the country.

1545. (*Chairman.*) In those native States in which opium is largely grown?—Yes, in those. Of course, I only speak of those, but those are the most important.

1546. Of the native States?—Indore, Gwalior, and Bhopal are the great opium-growing States with some smaller ones that I mentioned just now.

1547. What is the aggregate population of those native States that you have mentioned approximately?—I should think about ten millions in Central India. Then there is Udaipur and a great part of Rajputana, but there the opium is more grown for local consumption; it is not so much exported except from Udaipur which is also under our agency in Central India, but the opium instead of coming to us at Indore for Bombay goes by way of Ajmere and Ahmadabad.

1548. With regard to these Native States to which you have more particularly referred, you say with con-

Sir
L. Griffin,
K.C.S.I.

15 Sept. 1893.

Sir
L. Griffin,
K.C.S.I.

15 Sept. 1893.

fidence that an edict of prohibition of the exportation of opium—?—Would make them bankrupt.

1549. It would affect their finances in a very serious degree, and involve the Government of India in great unpopularity?—The greatest. You see opium is grown only on irrigated land, on land that is too good practically for the rough cultivation of wheat and poor grains, so that it would be practically throwing it out of cultivation. If you can get 8*l.* an acre for your land as opium land and only one rupee for it as wheat land, it is a great difference to the cultivator.

1550. Is it a very exhausting crop?—It requires a great deal of manure and a great deal of preparation. It is an expensive crop to grow. I do not know that it is exhausting, if the land is manured well. It is a question of that. The poppy is grown on the same land year after year for any number of years.

1551. (*Sir J. Lyall.*) We have dealt with the result of prohibiting export. I suppose there are no Treaty obligations which prevent our prohibiting the export, are there?—An autocratic Government can do anything. It would be a most tyrannous act, which no civilised Government has ever done before that I know of.

1552. Has the Government of India any powers by which it might interfere with the cultivation of opium in those native States?—Not without violating all the traditions of the Government of India for the last 50 years. As I said before, you can do anything. The question is: Is it politic or is it just? There is no Treaty right by which you can interfere with the cultivation of a particular crop in a native State; it would be monstrous.

1553. Does much smuggling exist at present; what are the police precautions?—A great deal exists, and I cannot say that we are very successful in stopping it. I dare say I have had about 100 cases of smuggling a year, mostly into the Central Provinces. It is a very difficult country, as you know, an exceedingly difficult frontier, an immense number of passes and a difficult river, and 140 lbs. of opium which a man could easily carry would be worth a couple of thousand rupees.

1554. Are there any particular precautions taken?—We stop and search anything suspicious on the railways; but the precautions (my administration was almost entirely native territory) are as a rule taken on the frontiers of British territory by the Government of Bombay, and the Government of the Central Provinces. Take the police precautions themselves; not to go beyond your question, if there was prohibition of export then it is obvious what would follow. You would have a preventive system of a most stringent and enormous kind, which would be impossible. It would cause far greater evils than those you would try to remove.

1555. So far as you have observed what is the effect of the consumption of opium on the peasantry in Central India as consumers?—Well, they are not consumers to any great extent. It is too expensive for the peasants as a rule all over India. The Rajputs, who are more to the north and in some parts of Central India, consume it, and there are a good many Rajput States, but the Mahrattas are not as a rule addicted to opium. They take it, but not very largely; not so much as the Rajputs and the Sikhs in the Punjab. Those take it largely.

1556. But those peasantry who cultivate it in the Malwa States—you do not think that they consume it largely?—I do not think that they consume it very much any more than the people of Epernay who produce your champagne drink the champagne. They drink some thin wine costing 50 centimes a bottle. It is not a common practice, opium-eating in India; it is too expensive. It is like the working men in London smoking Havanna cigars.

1557. In your capacity, exercising the powers of a High Court in Central India, did you see any reason to suppose that crime was promoted by the consumption of opium, in the same way that it is promoted in England by the consumption of alcohol?—No; that idea is an entire fiction from beginning to end. I have never seen a case in my life, either as a magistrate or as a judge of a High Court, in which crime has been produced by the use of opium; at any rate within my recollection.

1558. With regard to the medical men serving under you in Central India, have you ever seen any reports of theirs about the effect of opium?—I have called for

reports from them more than once on the subject; but I do not remember that anything of any particular importance was ever said. Medical men will see the bad cases, and abuse in anything is bad. Of course taken in excess, which is not the case usually in India, there are bad results; but I do not think that they have ever said that opium fills their lunatic asylums, or hospitals, or affects their returns in any particular way.

1559. You were a long time in the Punjab, and came across a great many Sikhs. Did you ever notice any particular effect of the opium habit upon Sikhs?—Well; the Sikhs are a very hard race, and they would take more opium than most people, without injury, no doubt. Our regiments are full of opium eaters. I do not think they are a bit worse than anybody else. As you have asked me that question perhaps you would allow me to make one remark which is of great importance. I think nobody knows better than yourself that the Sikhs are prohibited by their creed—or rather by the founder of the second phase of their creed—from smoking tobacco, which is a universal practice throughout India. In default of this they take to opium and hemp and to a great extent to alcohol. They were very hard drinkers—the Sikhs—long before we ever came to India. I think that this Commission should consider the point that all races almost seem to want some stimulant of one kind or another; whether the fact of the Sikhs being prevented from smoking tobacco, which is their natural stimulant, and at once taking to alcohol and to opium is not a very strong reason against any sudden action here in the direction of prohibition. If you prohibit opium smokers from having opium, will they not take to alcohol, which is very much worse. It is only a suggestion.

1560. Your impression is that the effect of alcohol in India is very much worse than the effect of opium?—With alcohol we see its ill effects. But the people of India, I think, are a very temperate race. I do not wish to take away their character. You see more drunkenness in London in one night than you see in India in ten years. But alcohol is a thousand times worse than opium; it is preposterous to argue the question.

1561. Have you formed any opinion as to the future of the China trade from your knowledge of the export opium trade from Central India?—I have of course formed a very decided opinion up to a certain date; but I have not been connected with it for the last two or three years; and all I could say on that point is that the opium trade, so far as it has passed through my hands, was about say an average of two millions to two-and-a-half millions sterling a year, all opium going to China. The trade fluctuated largely, and although it fell off very much in 1881 and 1882, yet it revived considerably in 1883 to 1885 and 1886, when it rose again, I think, to about 39,000 chests. I think myself that the opium trade with China will revive; I sincerely hope it will, because it is in my opinion the most unobjectionable part of the Indian revenue. But it is a very open question, and unless you intimately know the Chinese side of the question, it is very difficult to say. Of course four times as much is now grown in China as is exported from India, and if that increases very largely perhaps the opium exports of India may fall off. But it is to be remembered that it is the higher classes of China who take our opium, which is of a very much better quality than the coarse Chinese drug, and they will continue to take it just in the same way as we buy champagne from France.

1562. (*Mr. Pease.*) Sir James Lyall asked you a question with regard to the use of the term money compensations or other concessions. In the paper that I have before me, which is "The Moral and Material Progress of India," 1878, it says:—"The native States have engaged so to manage their opium cultivation and production as to safeguard the British revenue; and in exchange for this service they receive either money compensation or other concessions." What is the meaning of that expression in this Government Blue Book. That is what Sir James Lyall wanted to know.

1563. (*Sir J. Lyall.*) Yes?—A. Let me hear it again. I do not quite follow the idea of it. It is quite clear that for a great many years past no payment to any native State could have been made on such account without passing through my hands, so that it is perhaps

wrongly stated. Oh, yes, well, I presume this merely means "the native States have engaged so to manage their opium cultivation and production as to safeguard the British revenue."

1564. 5. (*Mr. Pease.*) It is the latter clause to which Sir James Lyall drew attention, not to that, with regard to "the compensation or other concessions," a few lines further on, and "in exchange for this service they receive either money compensation or other concessions." The question is, what the "money compensation or other concessions" were that they received for protecting the British revenue?—Well, that question I am not able to answer at a moment's notice, because I do not remember that they received anything whatever. They certainly do not now. It is possible that in the old days, when the revenue system was formed, some concessions were made to them in order that they might agree to all their opium coming through British hands at Indore, and of course safeguarding the British revenue in that way. There may have been some ancient arrangements for compensation. But the system goes back about 60 years; the opium agency was started in 1830.

1566. (*Sir J. Lyall.*) This refers to the present, but it may not refer to any States under your control; it may refer to native States outside?—I do not think that there is any opium which comes into British territory which did not pass through my agency.

1567. I mean to say —?—It may refer to the Bombay States, very likely; certainly not to any of the States in Central India; we give them nothing whatever. They are bound to send their opium through our hands.

1568. (*Mr. Mowbray.*) I suppose, unless you acted in concert with the native authorities, it would be practically impossible to prevent smuggling?—The native States cannot prevent smuggling themselves. It is always a difficulty, but it is now stopped as far as it is possible.

1569. What I meant rather was that the officials of the British Government were more able to check smuggling because of their acting in concert with the native authorities?—Oh, certainly, the native authorities are perfectly loyal in the matter to us.

1570. And if the export were to be stopped by the British Government?—Of course you would have all the native States against you, smuggling; you could not stop smuggling then on an enormous scale. No preventive system would succeed.

1571. (*Mr. Pease.*) May I ask whether there are any tables of exports from those native States from which a comparison could be drawn to show what the importance of the opium export is compared with the total exports?—I can tell you everything about that that you wish to know.

1572. You said it was a very important item in connexion with their exports; can you tell us what proportion it bears to the total exports?—Of the native States?

1573. (*Chairman.*) What proportion does the revenue derived from opium bear to their total revenue?—It is an exceedingly difficult thing to say, and I have never been able to distinctly find it out. In the first place they are exceedingly averse to giving any statistics, and in the days of the great Scindia, who died a few years ago, although he was a very great personal friend of mine, I never could get any statistics out of him. He would never give any. The Government of India might call for statistics as much as they chose; you could never get Scindia to give them.

1574. Do they keep accounts?—Oh, they keep regular accounts themselves, admirable accounts. After his death things became different. We now know what it is they levy on the land for opium cultivation, but it is very difficult to say what area is under cultivation, because we have no one to measure it, unless they tell us themselves. We know what amount of opium leaves each State, and the weight of it to an ounce. We do not know what amount is consumed locally. Of that there are no statistics.

1575. (*Mr. Pease.*) Have you any information as to the value of other exports?—The value of the opium which is exported?

1576. No, the value of other exports as a guide; as to the value of the opium export as compared with others?—Yes, we have, to a certain extent.

1577. Could you give us a general idea of its proportional value?—You see each State must be dealt with

by itself. There are very few things which are exported from Central India, except opium, wheat, and cotton, not very much. Other things are not exported in any large quantities. I cannot answer your question; it is not one to which my attention has been directed for some time, but I could easily give it you from my own reports, which I have submitted for every year from the Central India agency. But our statistics are very uncertain, except for seaport towns, as to the internal trade of native India. Opium is distinctly the most important of the exports.

1578. (*Mr. Wilson.*) I think you said something about the export of Malwa opium having fallen off?—Largely.

1579. 45,000 chests?—I am not able to say what it is to-day. I have been out of India for two or three years.

1580. Can you tell us at all what influence that has had on the prosperity of native States, either as to the revenues of the rulers or the prosperity and condition of the cultivators?—Well, curiously enough, a paragraph in the very last official report that I wrote on the subject of opium covers, I think, that exact point, if you will permit me to read it. It is only a few lines. This was the last report I wrote on opium, and it is almost the last sentence of that report. "The continued depression in the opium trade is causing much anxiety to native chiefs, who see the principal source of their revenue in danger of decaying, while there is immediate loss and ruin to Malwa cultivators. The native durbars try to avoid reduction in their rates for opium lands, and compel the cultivators to pay the same rental for lands the produce of which has enormously fallen in price. The consequence is great distress and general complaint."

1581. Would you be good enough to explain a little further what you said as to the quality of this land and why other crops do not flourish on it; is it too rich?—Some crops would flourish on it very well, no doubt—sugar-cane, for instance. In India the land is roughly divided into irrigated and non-irrigated land; and opium requires a great deal of water, for it is grown at a time of year when there is very little rain, so that it has to be irrigated from tanks or wells. In Central India it is almost exclusively watered from tanks, and this makes the land very valuable, so valuable that it is hardly worth while using it for a cheap crop, and wheat is in Central India a cheap crop. It is a very rich country, and I have seen in many States the wheat rotting on the ground, because they could not carry it away.

1582. You referred to opium water?—It is a mere preparation of the opium.

1583. Is it exported, or used locally?—Locally.

1584. Only locally?—Yes.

1585. It is a by-product?—Yes, it is; it is a sort of solution of opium which the Rajputs take every morning before breakfast. A native Rajah with all his Court sitting around him will call for his attendant, who will pour some of it into his hand, and he will drink it off, and every one of the men round him will drink it in the same way. It is what the Russians would call *Lakuska*—a sort of fillop to commence the day.

1586. (*Sir W. Roberts.*) It is a daily thing?—Yes.

1587. (*Mr. Wilson.*) It is so strong that a small quantity will have an exhilarating effect?—Yes, it is what they want; it is their pick-me-up; it does not hurt them.

1588. How long does the effect last?—The Rajah after taking that has his durbar, and sits there for a couple of hours, does his business, then he goes into his zenana, then he goes to sleep, then perhaps he has some more; we do not know what happens there.

1589. (*Chairman.*) He takes more than one dose in the course of the day?—I think most opium eaters take at least two, but I do not say everyone does. Some of the Rajahs I know intimately, and they are not always the best specimens of their race; but I do not think opium has any particular effect on them one way or the other.

1590. (*Mr. Wilson.*) Would you explain a little further about the smuggling; I do not understand. You spoke about its being a difficult country; about passes and river, and so forth. What prevents any amount of smuggling at this moment; is there a coastguard; are there preventive officers either inside the native State or outside?—You see it is not the interest of the native States. They have no interest in preventing smuggling

Sir
L. Griffin,
K.C.S.I.
15 Sept. 1893.

Sir
L. Griffin,
K.C.S.I.

15 Sept. 1893.

except the good opinion of the Agent of the Governor-General. Their revenue is not hurt. We leave the prevention of smuggling, except on the main line of road, which I have always held to be British territory, though the native States try to persuade us that it is not, to the native States; but on the railways, which are British territory, we prevent it through our own officers.

1591. It is no use preventing something that can go round the other way?—That has to be done by the British officers. You must remember that. I am speaking of native India. I am living in native India, and have nothing to do with British territory.

1592. I understand, but what I understood you to say was, that if the present arrangements were abolished there would be an enormous increase of smuggling?—No doubt.

1593. I do not see what prevents any amount of smuggling now?—There is a good deal now, as I say, but it would be very much increased, because you would have every one against you. You would have the whole of the native States, the whole government as well as the people; they would all encourage smuggling. Smuggling would be *in excelsis*; Scindia and Holkar themselves, and all those great chiefs whom you cannot interfere with, would smuggle on an enormous scale, and convey the opium to their own frontiers by their own police probably. Now, if they do not exert themselves to prevent smuggling they hear of it from the head of the Administration. But in British territory the preventive work is done by officials with whom I have no concern; they are subordinate to other authorities, such as the Bombay Government, or the Central Provinces, or the North-west Provinces.

1594. (Sir W. Roberts.) You have seen no doubt practically a great deal of this opium habit, have you not amongst Rajputs and others?—Yes, habitually, constantly.

1595. Is it your impression that it is generally practised in moderation?—I think so. I do not mean to say that it has no bad effects. I have had servants who have been very inefficient from taking opium, but I have never had to discharge one for it. It makes a man very indolent, very often. Would you allow me to say one thing, the people who take it most—I only speak of the parts of India that I know—the people who take it most, the Sikhs and the Rajputs, are the finest races in India.

1596. And have they been taking it from generation to generation?—Yes, long before we came to the country.

1597. Has it been your impression that these races, the Rajputs and the Sikhs, have a different reaction in regard to opium from some other races in India, that is to say, that they tolerate it better, that they are constitutionally a little different?—I cannot speak of races that I do not know.

1598. How is it that Europeans do not pick up the habit in India; have you formed any opinion as to that?—Every race has a particular craving. Unfortunately, the English craving is for gin and for brandy. Each race has a tendency to some particular stimulant, I think.

1599. Then you think it is rather a special constitutional peculiarity of the Eastern people—the Chinese, and these Rajputs, and the Sikhs—that their tendency is to opium, and not to liquor?—They are very fond of liquor, if they can get it. Many of my distinguished friends like champagne and brandy mixed. That particular mixture killed Scindia.

1599a. Do you think it possible that the Europeans resident in India might take to the opium habit?—I think, if you stop the alcohol in India, as a great many people are trying to do, they will take to opium probably.

1600. A certain number?—They will take to something; they will take, perhaps, to hemp.

1601. Your impression is very strong that on the public health of India opium has had no deleterious effect?—Well, sir, it would be a mistake if I were to give you the impression that the people of India were at all addicted to opium. Some classes in certain races are habitués of opium, but opium, as I said before, is not an Indian vice at all; if it is taken, it is taken in moderation; and what I have seen so many people say is in my experience utterly wrong; that it has a tendency to require the increase of the dose if you take

it, I know hundreds of people who take the same quantity, the same little pills of opium every day of their lives; they do not increase it at all.

1602. The people who you say take that, are not people who are deteriorated in character or health?—Not the least; the best people in the race, of very fine physique.

1603. And the opium is not like drink among ourselves—the exception?—No, sir, there is no crime in connexion with the opium at all.

1604-5. No violence; but I mean the man who goes to extremes—to excess—the opium sot, as he has been called, is an exception among opium smokers?—You cannot see them, unless you go and look for them. They are not in the general population at all. You may find them in the large cities, no doubt, as you find all sorts of things in slums, but that has not anything to do with the general population. In what we call the opium dens, of course you may see people in Calcutta, or, for the matter of that, in Lahore; but they are outcasts or beggars, or drunken creatures, who would take to any stimulant.

1606. They are, in fact, people who are a little bit allied to the criminal classes in this country?—Yes, exactly so.

1607. A drunken class?—Yes.

1608. (Chairman.) The general effect of your evidence has been that, from your wide opportunities of observation in India, you have not seen that what is called the opium habit has produced widespread and grave moral evils among the population of India?—No, I do not think there is a single resident in India who knows anything on the subject who would possibly say so. I do not think I am singular in my opinion.

1609. Then with regard to the native States, with which you may have been officially concerned of late years, you have made it clear to us that in your opinion the prohibition of the present export trade in opium would occasion a grave disturbance of their finances, and that it would be resented by the general body of the population who are engaged in the cultivation of the opium?—Yes. If you wish to have a rebellion in India, I know no better way.

1610. You have further made it clear to us that in your view the prevention of smuggling would be impossible?—Impossible.

1611. In the sixth order of reference to this Commission, we are directed to ascertain what would probably be the disposition of the people of India in the event of a change of policy being adopted on the part of the Government, and a general prohibition of the cultivation and the use of opium being attempted. Now, you have been long resident in India; what, in your view, would be the attitude of the people of India in the event of a prohibitory policy being attempted?—Well, I do not think that the people of India have ever considered the possibility of anything so impracticable. But, of course, it would cause the utmost irritation amongst the people who are accustomed to take opium, the Sikhs especially, and the Sikhs are the backbone of our army in India, which we shall have to double in the course of the next 10 years. I do not know whether it is desired to make them disloyal.

1612. But you wish to put it to us too, that in your view, they would be made disloyal if we made this attempt?—I do not say that from my knowledge of India; I say that from my knowledge of human nature.

1613. Then, in looking at the state of public feeling in this country, on this question of opium, which has been reflected in the debates in the House of Commons, and in the divisions which have taken place on the motions made in the House of Commons, can you offer any suggestion by which the relation of the Government of India to this question might be in some degree modified? Do you think that it would be desirable and practicable that the Government of India should cease to take the position of a manufacturer and a producer of the article, and should limit its intervention to the imposition of duties for revenue purposes?—Well, but what would be gained by that? You would only have a very much larger production, if it were free. It would exactly do what some people do not wish to be done—it would stimulate, instead of stop the production, as far as I can see.

1614. You would recommend that no change should be attempted in regard to the position of the Govern-

ment of India as holding the monopoly of the opium production?—In the present temper of public opinion, which of course must be respected more or less, I would not stimulate it. My own personal feeling is that I would not stimulate the production of opium; I would invite the Government of India, as I have invited them on many previous occasions, to consider it as a mere matter of common sense. Opium is a luxury, it is only used by people who can afford it, and whatever fables may be woven by people about China—which we cannot absolutely disprove—the whole body of evidence regarding India shows that it does no harm whatever. You take off a burden of five millions sterling of taxation from the peasants of India; and you place it upon a foreign country which is perfectly willing to pay it, and you are asked by irresponsible people to abandon that revenue at a time when you want the revenue very much increased, and when you

must increase it, unless you lose India. It is madness. There is no justification for it; and if I might make one observation on my own account—

1615. We shall be very glad to hear anything that you would like to say to us?—It is merely with reference to what you were saying. I would say that it seems to me that much of the evidence which has been given before the Commission by missionaries in China is flawed and tainted in two ways. The first is this: that the missionaries, since this has been raised into an ethical question, are compelled, in their own personal interests, to denounce it; and secondly, that, as in China, every disturbance is due, not to opium, but to the missionary teaching, the missionaries are compelled to throw the odium of the popular dislike to themselves on to the opium question. That is the whole history of this agitation.

The witness withdrew.

Mr. HENRY LAZARUS called in and examined.

1616. (*Mr. Mowbray.*) I understand that you wrote to the secretary of the Commission wishing to give evidence upon this subject?—Yes, sir. After reading the report in "The Times" of Monday of certain evidence which had been given before the Commission, and which caught my attention accidentally.

1617. At present I believe you are living in St. Pancras?—Yes, sir.

1618. But you resided in China I believe, in Shanghai?—Yes.

1619. Between 1878 and 1881?—Yes, sir.

1620. Well now, will you tell the Commission anything which you wish to say. You were engaged in commerce, I believe, there?—Yes, sir.

1621. Not in the opium trade, I believe?—Absolutely not, nor had I any connexion with it.

1622. What was your business?—I was the first to erect a tannery in Shanghai on the European system, and at times I had as many as from 300 to 350 men in my employ, but the average number was 200.

1623. All natives of China?—Every one. At first they were superintended by three European overseers, eventually I only had one. We trained some of the natives as overseers in the various departments.

1624. Were you brought in constant and daily communication with your men?—Yes, and not only with them, but with merchants and the go-betweens of the merchants—the native dealers in Shanghai of nearly all trades.

1625. Now will you tell the Commission anything you wish to say as to the effects which you noticed of opium-smoking on the classes with which you were brought into contact?—Well, first of all, take, perhaps, the higher classes, the dealers, and those persons in business with whom you were brought into contact?—It is 15 years since I first went to China, and it is 12 years since I left.

1626. (*Chairman.*) Just make a continuous statement? I have taken out a list from my old contract book of some 38 names of men with whom I was in communication, and if this Commission goes to China, which I hope it will, they will have an opportunity of consulting them. I had a conversation with Fong-kee and Ken-wo; with one of those two men I had a particular conversation with regard to opium. In fact out of curiosity I often had some conversation with nearly all the native dealers I came in contact with, and I may say parenthetically that there are very few men in that class of life who are not capable of carrying on a more intellectual conversation than you could ever hold with men of a similar class in this country. I think I could best give evidence to this Commission if they would allow me to refer to two or three statements which appeared in "The Times" report of the evidence given before the Commission, and which occasioned my writing to you. One of the missionaries said that "in the cases where a man is an opium smoker, during the time that he is under the influence of the drug he can do his work as well as anybody, and probably owing to the extra stimulation, a little better than most folks, but when a man is under the influence of the depression which follows he is absolutely worthless, and it is only while he is under

"the stimulation that he is of value." Well I can only say that with regard to the whole of my men I never once had one of them unfit for work as a consequence in any way of the use of opium.

1627. And were they all opium smokers?—No, sir. Certainly not all opium smokers but they were taken indiscriminately from the labouring classes, and numbers of them were opium smokers on their own confession. My manager invariably asked them when they came, because he was informed that an excessive opium smoker was a lazy man. You may imagine that very few men will confess to going to excess in it, and in fact the wage that a Chinese labourer receives makes it absolutely impossible that he could do so. I believe that the average wage of a labourer throughout China is from four to five dollars a month. That will give you some idea, especially if he has to keep a family on it, how much he can have to spare on such an expensive luxury as opium. As a matter of fact, many of these men were opium smokers, the high wages they earned at the tannery afforded them the means, but never one of them was incapacitated for work through opium. And, moreover, at first I used to employ a European doctor in the tannery, having so many men; but after a time my manager discovered that a Chinaman who was taken with colic, diarrhoea, or constipation, those being some of their most common troubles (possibly but not probably due to opium), could be treated with patent medicines more efficiently than with anything else. I do not wish to mention their names, because I do not desire to advertise these patent medicines, which were many of them largely compounded of opium. I used to keep a stock of them, and whenever the men were taken ill they were given a few doses, and they effected a remarkable cure. I never had any trouble with the management, and amongst all the men that I employed I never had one who was so seriously ill as to be away from his work for three days at a time.

1628. May I take it that so far as your experience of the workmen you employed went you found that those who smoked opium were no worse than those who did not?—Absolutely not, sir. Then in answer to a question by Mr. Pease one of the missionaries said: "He never met a Chinaman who defended opium-smoking; they all looked upon it as a thing to be ashamed of." That is such a statement that I do not believe you could get one intelligent, unprejudiced Englishman who had lived for six months in Shanghai or any other part of China who would not say that it is a terrible perversion of the truth. I have not only been brought into contact with the working classes, but I have also come into contact with many of the better classes who were opium smokers, and I positively went in for it myself, just to see what it was like. I shall be able to give the Commission an absolutely certain answer to the question why it will never be taken up generally by Englishmen. It is simply because it is too slow, it takes too much time. For one little pipe of opium you have to lie down in order to smoke and roast it before a lamp. It requires something like three or four minutes before you can do away with one little ball. I tried to produce sleep, but it had very little effect on me, after having smoked eight pipes in succession.

Sir
L. Griffin,
K.C.S.I.
15 Sept. 1893.

Mr. H.
Lazarus.

Mr. H.
Laurus.

15 Sept. 1893.

1629. How long did you continue that?—Only three or four times. I did not want to acquire the habit. I could not afford to waste the time. I was only wanting to go through a number of pipes in order to experience that delightful sleep which I had heard was produced, but the Chinese rather laughed when I spoke to them about it.

1630. That I take to be your explanation of the reason that the Europeans in China do not take to opium-smoking?—I say that no European who has the slightest energy in him ever could take to opium smoking.

1631. Have you anything to say with regard to the higher classes of people that you came into contact with, the dealers and the merchants?—Yes, I should have come to them a little bit later, especially that one that I got the most information from, Fong-kee. That man had teeth absolutely black, he was about as marked a specimen of an excessive opium smoker and eater as could be found, and he was a notorious one in Shanghai. I can say without hesitation, without fear of contradiction, that for intellectual power, energy and straightforward dealing in business there was not a man amongst the native traders who would surpass him. Not only I, but my brother, whom I had the misfortune to lose in China, and all the merchants that I spoke to and knew intimately, agreed that there was no straighter broker than Fong-kee. I said to him "Why for smoke so much opium; your teeth are black?" His face was so wasted that you might almost have made your hands meet in the hollow of his cheeks. "Give it up," I said, "you would be so fine a man if you gave it up." He was very tall and broad, but as thin as possible. I would not like to say the value of the opium he smoked a day, but it was something considerable. He told me "Suppose I do not smoke one day, I must die." The effect of leaving it off one day would have been his death. I am telling you this to show that, even in the case of a really excessive smoker, it is not true to say of such a man that he is wanting in intellectual power; and to say that he is lazy is simply an absolute lie; and I would not confine my observation to that one man, but would instance others whose names I picked out: Cheng-ching, Ah-ling, Wah-cheong, Yuet-sung, Foong-tai, Che-kei, Fau-chung, Ae-dong, Nam-woo; there are 38 of them, and at a distance of 12 years' time it is impossible to say which were the opium smokers

among them. Many were opium smokers. I imagine there are very few gentlemen of any position in China. I mean to say men who could afford it, who do not have an occasional pipe, but the statement that a man must constantly go on increasing and increasing the dose, is about as true as that an Englishman cannot drink without going on till he gets drunk, or having got drunk once he must get drunk every other time.

1632. (*Chairman.*) We are much obliged to you for the testimony you have given from your point of view and expressing the general results, according to your judgment and your experience; is there anything further that you want particularly to say?—Yes, my Lord, there is a most important question. You have been told here that the cause of the dislike among the Chinese of Europeans is the opium traffic. I say without any hesitation that that is the grossest misstatement. I went up the country—and I have brought with me a map of the interior—for six weeks. I was in a houseboat with a native crew. I visited, amongst other places, one of the missionary stations, and for situation I never saw anything more delightful. You go up to the missionary station, which was on the top of a hill, by two zig-zag paths, and on the one side there was a series of pictures of what would become of Chinamen if they did not get converted. They were being pushed down by the forks of devils and stirred about in a fire. It seemed to me infinitely sad that civilised men should offer that as an inducement for conversion to anything. I went back to my boat, and I asked my "boy" to come with me—a boy is the name for a butler at Shanghai, he is at the head of your service—I asked the "boy" what did the people think of these things, and he gave me to understand what I imagine this Commission and any sensible man must realise, that the missionaries and their ways are really the great trouble and the great drawback to the liking of Europeans all over China.

1633. I do not think we can go into the missionary question; we are only here to deal with the opium question?—I may say with regard to my domestic servants I had a very large staff, and I know that they smoked opium, because when sometimes the smell was rather too strong—although the natives' quarters are separated from the English—I used to ask them to desist; but never one of them, all the time I was in China was incapacitated in any way from having used the drug.

The witness withdrew.

Adjourned till to-morrow at 11 a.m.

At the House of Lords, Westminster, S.W.

SIXTH DAY.

Saturday, 16th September 1893.

PRESENT:

THE RIGHT HONOURABLE LORD BRASSEY, K.C.B. (CHAIRMAN, PRESIDING).

SIR JAMES B. LYALL, G.C.I.E.
SIR WILLIAM ROBERTS, M.D.
MR. R. G. C. MOWBRAY, M.P.

MR. ARTHUR PEASE.
MR. H. J. WILSON, M.P.

SIR CHARLES E. BERNARD, K.C.S.I.,
Acting Secretary.

Sir CHARLES E. BERNARD, K.C.S.I., the Acting Secretary of the Commission, examined.

Sir
C. E. Bernard,
K.C.S.I.

16 Sept. 1893.

1634. (*Chairman.*) I believe you have received letters from two gentlemen who were summoned to give evidence before this Commission?—Yes, my lord.

1635. From Sir Joseph Fayrer and Sir Hugh Low?—They were both unable to attend.

1636. But you have received letters from them in which they represent their views upon the question

which is before this Commission?—They have sent papers to be submitted to the Commission.

1637. Would you kindly read the communications which you have received?—

The opinion of Sir Joseph Fayrer, K.C.S.I., surgeon and physician of 30 years' experience and practice

in many parts of India, on the opium question, to be submitted to the Royal Commission, he being unable to be present.

"It is most strenuously urged by a large and influential, and, as I believe, thoroughly conscientious party, that the use of opium either by eating or smoking, is attended with the most pernicious results, causing, sooner or later, demoralisation and destruction alike of body and mind. They seem to be of opinion that the degraded condition of the *habitues* of opium eating or smoking houses, whether in India or China, represents the natural, and one might almost say, the inevitable results of the use of opium. Ideally, one would wish that stimulants and narcotics, such as alcohol, hemp, opium, tobacco, chloral, and sundry others of recent invention, had no existence; but, unfortunately, human nature is so constituted that it will not forego the use of these drugs, each and all of which is liable to be abused, and when so abused, produces the most degrading and pernicious effects upon the human race. One of the curses of our own country and of our own race is the abuse of alcohol—the amount of disease, misery, and crime produced by it is incalculable. With any who might enter upon a crusade against this form of indulgence, which should correct the abuse and limit the use of it within reasonable bounds, I confess that I should have the greatest sympathy; but I should never expect to succeed in excluding alcohol altogether from use as food. There cannot be a doubt that, in the great cities of India, in China, and probably elsewhere in the East, the abuse of opium is carried by a certain, but a limited number to a great extent, but to nothing like the extent to which the abuse of alcohol is carried. It is well known that over large areas of country in India, by tens of thousands of people, opium in moderation, is habitually used by the Natives; and that they have a thorough belief in its efficiency to protect them against malarious diseases; and that under its influence all the functions of life are better performed; that life is not shortened; and that physical and mental conditions are improved and not deteriorated. This I know to receive the support of those who know far more about the subject than I do, and I am not aware of anything to controvert it.

It is said I believe by its opponents, that the tendency of opium eating is ever to increase—to induce, it may be, slow but sure degradation and destruction. I do not believe this. In the course of many years' experience in India I have known so many who have been habitual consumers of a small quantity of opium without in any way suffering from it, or without any tendency to increase the habit, that I am unable to agree with those who state otherwise. One of my most intimate friends—a native nobleman, with whom I frequently associated—died after the age of 80. He was a man of remarkable intellectual, mental, and physical vigour, of wonderful powers of endurance of fatigue, a great sportsman, a splendid shot, as complete an example of a native gentleman as one could wish to see. He was an opium eater and consumed his two or three doses a day with unerring regularity. This he had done for many years when I became acquainted with him. He never increased the quantity, nor had he done so for several years; he showed no signs of degeneration, mental or physical, or anything suggestive of a pernicious habit. It must be in the experience of old residents in India to have met with similar cases.

"It seems to me that this crusade against opium, though well meant, is not reasonable. It is as unfair to argue from the *habitues* of opium-smoking houses, as it is from the frequenters of gin palaces and other haunts where the most degraded forms of alcoholic abuse may be met with in our own country. Both, in extreme cases, are an evil; but the moderate use either of alcohol or opium must be left to the discretion of those who feel called upon to take them.

"There is another drug which is also in frequent use in India, *cannabis sativa*, the hemp, which is infinitely worse than opium. I find no objection taken to this drug by the anti-opium party. I can see no medical ground that would justify violent interference with the custom in question.

"Control and limit the abuse of opium, but to interfere with and suppress it altogether seems to me unjustifiable. I know no reason why opium should be interfered with and alcohol be exempt. The evils of the one are far inferior to the evils of the other, and the moderate use of both—as I have said—should be left to the discretion of those who want them. It seems

to me to be clearly proved that the moderate use of opium is not attended with the evil results ascribed to it, though, as with alcohol, a certain number of persons will abuse it.

"I repeat, therefore, that on medical grounds I see no reasons for abrogating the present regulations concerning opium in India. I confine myself entirely to the medical aspect.

"31st August 1893."

"J. FAYRER, M.D., F.R.S.

The opinion of Sir Hugh Low, K.C.M.G., who was for many years employed as administrator of Perak and other States of the Malay peninsula under the British Government. Sir Hugh Low was unable to attend and give evidence during the time the Royal Commission sat in London.

"Such knowledge as I have on the subject was acquired in the protected Malay State of 'Perak,' in the Malay Peninsula, and in the colony of 'Labuan' in Borneo; and I am decidedly of opinion that there is no such abuse of the drug in those places as would make it politic further to interfere with its importation and sale, than is done at present under the existing Government regulations.

"The practice in 'Perak' was to lease for a term of years, usually three, the right to collect the Government duty of 7 dollars per ball on all opium imported, the sole right to prepare the crude opium into the State in which it was used, and also the monopoly of the retail sale of the prepared drug. The regulations under which the 'farm' as it was called was conducted provided a maximum price at which opium might be retailed by the farmer, reserved to the Government control over the quality of the drug supplied to the public, and provided for the licensing of retail shops.

"The 'Revenue farm,' thus created was disposed of by tender, but not necessarily to the highest bidder. Debts for 'Chandoo,' as the prepared opium was called, were not recoverable in the courts.

"There were three classes of the population which used the drug.

"1st. The labourers, chiefly Chinese, employed in the extensive mining industry. These for the most part used it moderately, and as a prophylactic against miasma, and formed by far the most numerous and the poorest class of the consumers.

"2nd. Shopkeepers, artisans, clerks, domestic servants, and others who were in possession of larger incomes than the workmen in the mines. There was a greater tendency to abuse in this class than in that preceding.

"3rd. Wealthy Malays and Chinese of the highest social positions.

"My impression is that two-thirds of the Chinese population were smokers of opium, but amongst the Malays very few of the country people were addicted to the practice. The criminal classes of both nationalities used it freely.

"Very few cases came under my notice in which the habit of smoking opium appeared seriously to affect the general health, but such was undoubtedly occasionally the case.

"The quantity of opium imported into Perak was very considerable, and the revenue derived from it by the Government was large in proportion. I will endeavour to procure on my return to London some figures on these points.

"I never heard of any case in which crime was committed under the influence of opium, and persons under its influence give no trouble to the police. I have been informed by respectable Chinese that its use in moderation clears the intellect, and renders men more capable of transacting important business. The use of opium was prohibited in the prisons of the State, and detention in these, where the sanitary conditions were excellent, the food good, and labour regular, invariably resulted in improved physique of the inmates.

"HUGH LOW.

"11th September 1893."

The following extract was submitted to the Royal Commission by Mr. H. N. Lay, C.B., as it bears upon the charge that opium was being forced upon the Chinese.

Sir
C. E. Bernard,
K.C.S.I.

16 Sept. 1893.

Sir
C. E. Bernard,
K.C.S.I.

16 Sept. 1893.

EXTRACT from a TRADE CIRCULAR issued by Messrs. Bush Brothers, merchants of Newchang, a port of N.W. China, under date January 1881.

* * * * *
“OPIUM.—It will be noted that the import of Malwa is about one-half of what it was in 1879, the difference being 1,064 piculs (chests)= taels, 608,754. This falling off is due, we understand, to the increase of the native poppy, as well as to the higher value ruling for the Indian drug. The latter still obtains a great preference over the others, but consumers cannot afford to pay too great a price for the superior quality. There is plenty of evidence to show that the authorities of this province at any rate do not use very serious exertions to prevent the consumption of the foreign drug, but on the contrary they prohibit the cultivation of the poppy because as was pointed out in a proclamation some time ago, it is essential to keep the *military chest well supplied* by the duty levied on Indian opium. This, we take it, is rather a strong argument against the assertion that opium is forced upon the Chinese.”
* * * * *

BUSH BROTHERS.

LETTER from Mr. T. W. DUFF, for 30 years a merchant in China, whose offer to give evidence came too late for the Royal Commission to take advantage of it; ordered by the Commission to be printed with the previous letters submitted to them.

“In answer to your note of yesterday I send you herewith my ideas about opium. Having lived in several of the outports in China during 30 years, I have become somewhat familiar with the habits of the natives and have had a great deal to do in business with men who indulge in the opium pipe. My opinion is, that under the circumstances of their living, food, climate, and habitations, opium to them has no deleterious effects, indeed quite the contrary, for it is a positive need and they could not do without it. In what I say here, I do not refer to the occasional abuse of the drug in some of the large towns like Shanghai, because there as in all large places, you may come across scenes of debauchery, perhaps not so bad as seen in our large centres of ‘civilization’ arising from alcoholism.

“The Chinese in Southern and mid-China feed on rice, vegetables, tea, and other foods containing a large percentage of water, with now and then a taste of beans, curd, and perhaps once or twice a year a little pork. In these provinces they sometimes take a little spirit, and being warmed it becomes very weak; this luxury does not extend much to agricultural districts. They live in malaria and never if they can help it on high ground; their houses principally consist of a ground floor without boards, with the smallest of rooms above this,—generally averaging about 14 feet to the roof or under. Their highways are canals into which all their towns drain. Their fields, heavily manured with human ordure, eventually drain into these waterways. They have no waterworks to filter for them. The floating population is numerous and more so than in any other country; penned up in badly ventilated ‘holds,’ living in a stifling atmosphere over bilge water, without opium taken as a febrifuge they could not possibly exist. You will easily understand, I think, that under all these conditions opium is a positive need. It is all very well for fully fed and stimulated faddists, who take wheaten food and meat with other articles of nourishment, to think they can do without opium, but let them live under these conditions for some years. They would in my opinion change the subject very quickly. You never hear of foreigners

taking opium in China for reasons that they live under very different conditions. Indeed foreigners, whether missionaries or traders, are far better off both as regards food and dwelling than in this country.

“The Chinese who live in mountainous districts and in the north where alcohol is taken do not have so much desire for opium. It is only on the malarious plains or fenny and marshy districts where it is consumed and needed, and even here generally in a moderate form.

“All nations I contend need a stimulant, either in the form of strong food or drink, and this is my own experience through most of the countries of the world either by land or sea.

“Again the Chinese have but little amusement either out or indoors, not being an excitable race they derive consolation and pleasure,—securing health too,—with their pipe in their solitude (perhaps with less harm than our people do in their music hall or village tavern). The cleverest and best men I have always found smoke opium occasionally, and workmen and boatmen especially are always the most active who occasionally indulge in the small amount they can afford to spend on this medicine (as it is called in China).

“In conversing with foreigners Chinese will sometimes speak against the habit of opium smoking, and especially so to missionaries and others who they know have not the habit. It is mere politeness on their part to be always in accord with their guest or host. I have never in all my life heard any Chinese blame our Government for its introduction, on the contrary it is understood to have been grown in the country for the past 100 years. It is now called ‘foreign medicine’ by all those who sell it, because the best comes from India, the next best from Persia, and some from Turkey. The native opium burns the throat, and until lately was seldom used alone, generally mixed with the Matwa or Patna drug. In 1865 I passed through large fields of poppies near Peking on the road to the Great Wall, and it would then have been grown in larger quantities generally, but for the unsettled state of the country, after the Taeping rebellion. Proclamations were at this time given out prohibiting its growth, not because they did not require opium, or on moral grounds, but on account of the difficulty of raising the revenue; opium taking smaller bulk than rice or grain, could more easily evade the barriers, while the Peking authorities could not have existed without the revenue of thirty taels per picul, collected through the foreign customs on their account. The opium revenue has been of the greatest service in centralizing the Government at Peking and has taken what would have been a powerful weapon out of the hands of the different viceroys.

“While having the greatest respect for some of our missionaries and others engaged in keeping up this continual cry against this Indian opium, I cannot help thinking they are not sincere, and if so are dreadfully mistaken in trying to govern the habits of 600 millions of people in China and India. I am afraid it is done more in the way of advertisement and in the zeal for their cause. I would like to think better things of them, but when I occasionally read such distorted accounts in their prints, I cannot help feeling that they are not minding their own shortcomings. The nation of China is quite capable of taking care of itself. Physically there is no finer race of people on the globe than the Chinese, who have arrived at the economic science of living cheaper than any other race, and who can if need be work harder than any other and in any clime. I fear they are our masters now, without the sword, for economy of living must make them so, as the Americans and Australians have already found out.

“Yours sincerely,

“T. W. DUFF.

Mr.
W. Lockhart,
F.R.C.S.

Mr. WILLIAM LOCKHART, F.R.C.S., called in and examined.

1638. (Chairman.) Will you briefly state the positions which you have filled, and the places in which you have resided, where you have had the opportunity of forming an opinion, on the questions which have been submitted to this Commission?—With pleasure, my Lord. I went out to China as a medical missionary in the year 1838. I was located for a time at Macao, I then went to Chusan, then to Ning-po, and finally to Shang-hai, and during the latter part of my residence in China, I had a large hospital in Peking. I had some half-dozen hospitals in these various parts of

China. I left China in 1864. I was 25 years at work as a medical missionary there, having had opportunity of constant intercourse with the people, and was mixed up with them in all their life. I am absolutely a medical missionary, that is my vocation.

1639. (Sir W. Roberts.) Then you have had a very large experience?—Very large.

1640. Of the effects of opium in China?—In China alone, except what I have seen incidentally in England.

1641. What has been your impression acquired during all these years of the effect of opium on the people of China?—Many of them take it in small quantities. It is not particularly injurious to them if they continue to take it in small quantities, but it is so seductive a thing, that they very generally increase it; and if they fall into evil circumstances and become poor, they take to it in larger quantities. When they become the victims of the opium habit, it is decidedly pernicious and injurious to them, in every respect. They fail physically; their mental faculties are not so particularly impaired, when they are not in the act of smoking opium, but their general system becomes so deteriorated, and so debased in every way, that the people who are the victims of this habit, are not allowed to give evidence in any legal proceedings, in any of the courts of justice in China at all. They are not considered as people of the community who are above corruption, and they would not be allowed to give evidence in any legal proceeding.

1642. Does that description apply to habitual opium smokers who are temperate, or merely to those who take it in excess?—The latter part of my description applies simply to those who take it to excess, as a means of dissipation.

1643. The people who correspond to our drunkards?—Exactly; and I may state that the proportion of those who take it in moderate quantity is about 10 per cent.; those who take it in excess, from 3 to 5 per cent. of the total population, and that is all. When ever those large numbers are stated as victims of the opium habit, or when people say that it is one-third of the population, or one-sixth of the population, they are totally wrong, because there is not enough of opium in the country to enable them to take it, to the extent which they ought to take, if they took it in excess. I mean by "ought to take," that they are necessitated to take it to relieve them from the excessive languor, and the pain and distress they suffer, from the want of their usual stimulant.

1644. I think it has been rather explained to us that those numbers apply, not to the entire population, but only to the adult?—I never saw a child smoking opium in China, it is entirely confined to adults.

1645. With reference to the adults, it might be said roughly that about ten per cent. ?—About ten per cent. take it in small quantities.

1646. And that is your view?—That is my view.

1647. I believe with that explanation, it is the view generally given, that it is not ten per cent. as applied to the entire population, but merely to the adult; that it does not amount to more than one per cent. of the total population?—Just so.

1648. That would be about right do you think, adult males I understand?—Women also take it, but not to the same extent. I have no means of knowing the difference between the numbers of females or males that take opium. Women do smoke opium, but not so many as men.

1649. Would it accord with your general experience in the parts of China that you have been in, that about one in ten of the adult males are opium smokers?—Yes.

1650. And that about seven per cent. of the adult makes use it moderately and without injury, and about three per cent. use it injuriously?—About three to five per cent. use it injuriously.

1651. And from five to seven per cent. use it moderately?—Moderately.

1652. And without injury?—Without injury.

1653. Or even beneficially?—Well, the trouble is, when persons begin to smoke opium they are apt, under almost all circumstances, to increase the quantity, and then they become victims to what I call the opium habit. I should not say that even the moderate use of opium was beneficial.

1654. But you would call it still the opium habit if it were persisted in moderately?—Well, you might; by the victims of the opium habit I mean those who suffer from the excess. May I say as to the reason why I limit the numbers in the way that I do? The reason of my limiting the numbers is this, the importation of Indian opium is roughly about 100,000 cwt., and the native growth is about the same quantity, so that the

amount of opium used in China is about 200,000 cwt., which is reduced by the making it into smokable extract, about 20 per cent.—20 or 25 per cent.—in fact, one-third of the opium is mere vegetable extract; and so the smokable extract is reduced to one-third, and if you divide that among the population it comes out very much in the figures that I speak of.

1655. But we are told that the quantity of native opium is four or even ten times larger than that imported; I think that is the nature of the evidence given?—I have no means of contradicting the statement, only personally I do not believe it. I have no present means of contradicting the statement, because I am absent from China, but I very seriously doubt that there is any more than the 100,000 piculs that I spoke of. Some years ago it was 60,000 piculs. I know it has increased to 100,000 piculs. It may be a little more, but not very much. Practically, I think, that is about the correct statement.

1656. You evidently think that the statements made about the amount of China opium are not sufficiently exact to be relied upon?—Exactly so.

1657. It is some time since you left?—I left in 1864. I have kept up my connexion with China ever since; I am just as much in connexion with China, now as I was when I was living there; I am just as much interested now in what is going on in China, as ever I was, and I have endeavoured to keep *au courant* with this question of native opium.

1658. The information that reaches you is not to the effect that the production of native opium is increasing?—Yes, it is increasing but not beyond the figure that I have stated. It does constantly increase, I know that; since I came home it has increased from 60,000 cwt. to 100,000 cwt.

1659. That is the native opium?—The native opium.

1660. But then that is an estimate I presume?—There is no census of the population, nor is there any regulation of the opium lands to that extent which would enable you accurately to define the quantity; it is partly a guess I admit.

1661. I am going to ask you a very general question: Is it your impression from all your knowledge of this question that there is any national effect of an injurious nature, produced on the Chinese by the consumption of opium?—In the proportion of those who use it in excess it is very injurious. In my knowledge of various commercial men, artisans, skilled workmen, with whom I was personally acquainted and whom I knew intimately in all their relations of life, I know that they do take it, and it does not interfere with their business, nor when they take it to a small extent does it interfere with their health or their life. A man who smokes opium moderately will consume about a drachm a day, those who take it to excess will take from four to ten drachms a day.

1662. That is of the smokable extract?—Yes, the smokable extract.

1663. Containing about one-third of opium?—No; the smokable extract is very pure opium. It is one-third of the crude opium.

1664. What name do they give to the thing which is actually smoked?—They call it Ta-yen or great smoke. Everybody knows that they cannot smoke crude opium, it must be reduced to a watery extract.*

1665. It is mixed with some vegetable matter?—They take as much smokable extract out of the opium as they possibly can; it is the pure smokable extract that they use.

1666. You have taken some interest in comparing in your own experience the effect of alcohol and opium?—Yes.

1667. What is your experience with regard to the comparison of the effect of opium in China on the Chinese, and the effect of alcohol on the people of this country?—Opium is personally hurtful to individuals. Alcohol is a much greater social evil to the individuals that take it to excess. The action of opium is more personally injurious than that of alcohol; as a social evil there is no comparison between the two. He that takes alcohol to excess is a nuisance to society, a man

* Note by witness:—The crude opium is boiled with water; the solution is strained and boiled down to a certain consistence somewhat thicker than treacle, and that is the smokable extract.

Mr.
W. Lockhart,
F.R.C.S.
16 Sept. 1893.

that smokes opium to excess subsides into quietness the moment he has had his pipe; though he may be cruel at home and sell his wife and his business to buy opium, he is not publicly a nuisance, and I believe (to go further than your question) that alcohol is an infinitely greater curse than opium.

1668. You mean that the use of alcohol, as practised in this country, is a greater curse to the community here than the use of opium, as practised in China, is to the Chinese?—Exactly, that is my distinct and definite opinion formed on very large experience, and with great care taken in the elimination of all extra circumstances, to enable me to form a definite opinion about it.

1669. As regards suicide, opium is used for suicide?—Very largely.

1670. Very largely?—Very largely. The smokable extract when it comes into a person's possession is generally in a little cup, sometimes a man who is respectable and with some amount of money has a little silver box that he keeps it in; the common people use a little porcelain cup for it. When wishing to commit suicide, they put their finger into the cup and get out about a drachm or two of the opium, put into their mouths and very soon die. It is very much more fatal taken in that way than through the use of the pipe.

1671. Some of it is destroyed by the heat of the pipe, I suppose?—Very little; when in the pipe it does not burn; the morphia is not burnt out of it. Of course in the smokable extract, and in all the circumstances in which opium is used, the power is the amount of morphia in the drug, that is of course, as you know, what affects people; and when the pipe is submitted to the lamp it is only held just so that it will begin to smoke, then they draw in that smoke into their mouths and into their lungs as far as they can introduce it, and afterwards expel it. The morphia is not destroyed; very little of it in fact is destroyed, it never burns away when applied to the lamp, it is only heated.

1672. Speaking of suicides again, is it your impression that the use of opium in China provokes a tendency to suicide?—No, I think it is only when they get into very grave difficulties, into debt and circumstances of that kind, family discord, and so on, that they take opium. Women especially use opium as a means of suicide, sometimes after quarrelling with their mothers-in-law, because the females all live in one compound. Their mothers-in-law are sometimes very disagreeable, and to spite their mothers-in-law, and to place the death at their door, they will take opium. I have known that again and again, many I have been called to, and when I asked, "What is the reason of this?" I have been told, "Oh, she quarrelled with her mother-in-law."

1673. Then your implication is that the use of opium does not cause an increase in the number of suicides, and that if they did not use opium as a mode of suicide they would use some other mode?—They would hang themselves generally or cut their throats; I have seen every plan that they adopt—sometimes drown themselves. I have been called to them under all these circumstances—cutting their throats, hanging themselves; but more generally in the large majority the suicides were by taking opium. It is the pleasantest mode of committing suicide that I know of.

1674. Speaking of those persons who have adopted the habit in excess, I presume they applied to you in the hospital sometimes?—Very largely; many thousands.

1675. From your experience in the hospital, did you find that they were curable?—Yes, sir.

1676. How would you express your opinion on that point; were they as easily curable as a confirmed drunkard?—Quite as curable. I think more so. They used to come to me under the despair of the increased quantity of opium that they had to take to produce the given effect of quietude, and beg to be delivered from the evil that thus came upon them. They were victims of this increased quantity, and they would remain in the hospital. I required that they should remain with me, give me their pipe, promise that they would not buy any more opium, and in fact I prevented it, as far as it was possible to do so. And then I used to help them by medicine of various kinds, stimulants, and with some opium in the medicine that I gave them, and gradually diminished the opium, and gave them

tonics and stimulants, ammonia and such like, and they got well in large numbers. I do not say that some of them would not slip back again into the opium habit after they left me, but they were delivered from the vice and went out to their usual avocations as before they were submitted to the opium.

1677. Well, I think we have got pretty completely from you, your impressions as a medical man of the effect of opium in China?—May I state one thing, I wish to emphasise very particularly one thing regarding the use of opium in China. We do not, and never have forced the use of opium upon China. It is repeatedly and over again stated, that we force the Chinese to take opium. Now, we have never done that; it is only taken the same as Manchester goods, and other articles of merchandise; we have never forced it. The British Government had this legacy of opium from the East India Company, they continued the cultivation, that is the management of the opium farms in India, and sent the opium to China, it was never sent by Government vessels; it was never, except in the first instance, sent even by the East India Company in their vessels; it has always been sold in Calcutta, and then sent by merchants to China. It is said that when the vessels go along the coast, they frighten the people to make them buy opium. It has never been the case. The Bishop of Gloucester once said, and this has been quoted over and over again, and it is because of that I wish to enter my most emphatic protests—he said that we took a ball of opium in one hand, and a revolver in the other, and said to the Chinese: "If you will not buy this opium, I will shoot you." That is an exaggerated statement altogether. There is not a particle of truth in anything regarding the forcing of opium upon the Chinese. It has never been done, and is certainly not done at the present time. I have been so much mixed up with the people of China that I know all the particulars of their lives, and I know that there never was a question raised that either the Government or merchants have forced opium upon them. It would be very desirable if the Government could relieve itself of the cultivation or the support of the poppy trade in India, and that they should give up the opium "go-down," and throw trade in opium free. You cannot abolish the growth of opium in India; it would be simply impossible; but it might be very much diminished, and the English Government should not engage in trade, still less should they engage in such a thing as the opium trade. For the English Government to be mixed up with the production of opium is, I think, a most injurious circumstance, and both as a missionary and as a man, I should very much deprecate the continuance of the present system on its present grounds. Let them take the duty on it as it leaves the country, but give up the "go-down," reduce the area of cultivation as much as possible, and thus show that practically we wish to save, as far as possible, the Chinese from excess in the use of opium.

1678. (Mr. Wilson.) Some years ago, you published a book on this question?—Yes, I did.

1679. Which I have here; you quote therein a paper that was prepared partly by yourself in 1855?—Yes.

1680. That is nearly 40 years ago now?—It is.

1681. Are your views substantially the same now?—Very much the same. I have had more experience, which certainly has modified some circumstances; one cannot live 40 years among people without in some degree modifying his views. If I have modified my opinion I will at once say so. I do not know to what you are alluding.

1682. I notice you state there, as you have stated this morning, that you treated several thousand cases in the hospital at Shanghai?—I did.

1683. Did those people come to the hospital on account of the opium habit, or was it that they came for other diseases, and incidentally were opium smokers?—Because they were opium smokers and wished to be relieved from the habit, not from other diseases. I do not say that a man might not have some trouble besides his opium. Very likely he would have severe diarrhoea and colic, the result of opium smoking, which he would wish to be relieved from as well as the opium. He knew the opium produced this; and substantially they came to be relieved from the opium habit.

1684. I think we have had it stated here that a large number of the people, if not the great proportion of those who take opium, take it to relieve pain and suffering from other diseases. That is not your opinion?—No, some do, not the large proportion of them. If

the question is: Does a large proportion of the people take opium to be relieved of pain? I simply say it is not the fact. They take it as a means of dissipation.

1685. I see that at another place you say, "It is so cheap that the ordinary working classes, the labouring population, can very readily supply themselves with what they want?"—With opium?

1686. Do you think that would be the same now?—In regard to native opium it would.

1687. That applies to native opium?—Native opium. The Bengal opium is more expensive, but it is far better, and rich people always take it; there is more morphia in it, it is more effective, and it is a very much dearer article. It is not mixed with so many other ingredients as the native opium. The native opium is very impure.

1688. Have you known many cases of Europeans taking the native opium?—No.

1689. Any?—To a small extent, yes; a large extent, No.

1690. Why do they not?—It takes a great deal of time to smoke opium. European merchants have not time to do it, and there is a distaste on the part of Europeans to take opium, they do not do it. If they did use opium, they would take it in the form of laudanum; they would not smoke it; and when taken in the form of laudanum about one-tenth of what is taken by the pipe would produce a very marked effect upon them.

1691. I take it in China it is almost entirely smoking?—Entirely.

1692. There is not any eating?—Not very much. It is largely smoking.

1693. When you speak of taking opium you refer to smoking?—The man who is in the habit of taking opium, and not having time to go and smoke, would put his finger in the opium cup and put the opium into his mouth, but that is not the usual plan.

1694. I see that you refer to this, that they continue this smoking for a longer or shorter time according to the effect wished to be produced?—Yes.

1695. After the effect has got to a certain point, are they sufficiently masters of themselves to be able to go on up to the limit of producing the precise effect?—Yes.

1696. They can?—Yes. If they give up the pipe and lie down they go to sleep, but if they keep themselves awake they can go on smoking opium for a lengthened period, until the point must come when they are obliged to put down the pipe; then they become sleepy.

1697. I suppose that with a drunkard in London the more he takes the less control he has?—Yes. The use of opium is very different, it produces a tranquillising effect and they become tranquil; they are not violent and boisterous as a drunkard is.

1698. Now, why do they lie down?—Partly for resting, the use of the pipe almost necessitates their lying down, that is the use of it as the Chinese use it; they lie down with their face, it may be, on a level with the lamp they use. The bowl of the pipe is not a large bowl like the bowl of a tobacco pipe, and the little mouth of the bowl is brought to the flame and the resulting fumes inhaled. They could not do it very easily if they were sitting up; they could do it, but that is the usual habit, a man lies down to take his pipe. When people are visiting in China they do not sit on chairs. Generally at least the host and his chief guests sit on a large kind of couch or platform as you may call it, and it is usual for a host to say to his friend: "Let us have an opium pipe," and then it is brought in, and laid on this couch on which they sit. It is not a sofa, it is a platform. I should say it is more easy for them to do it in that way than sitting up and smoking.

1699. With reference to the general question of the introduction of opium in China, and whether it was or was not forced on China by us, had you any greater opportunities of knowing about that than any other student of Blue Books, and the official documents?—I think so.

1700. How would you know the opinions of various statesmen in India and China?—Partly by conversation, and generally by knowing what took place at the time the opium was first introduced to China by the Arabs.

1701. We have had a statement about that at very great length, and we have various documents and so

forth. What I wanted to know was whether you in China, where I take it you were at that time (and I ask especially because I suppose there were not very many daily newspapers, or anything of that kind), had direct personal opportunities of knowing any better than the members of this Commission would have from careful study of the official documents?—I knew all the official documents that came out, I had the opportunity of conversation with the Chinese on various subjects of this kind; I had no further opportunity than that; I knew the official documents that were published, they were open to me to read, and I spoke to the Chinese about them.

1702. (*Mr. Mowbray*.) To what do you attribute the general belief, which we have heard exists among the Chinese, that we have forced opium upon them?—I have never heard it, sir. I have never heard anything like it. Such an accusation was never made to my knowledge.

1703. (*Mr. Pease*.) With what society were you connected as a missionary?—The London Missionary Society.

1704. Were any of the members of your church opium smokers?—They were no longer members of the church if they used opium.

1705. You did not allow any opium smoker to be a member of your church?—No.

1706. Why?—Because of the disgrace they brought upon themselves and their fellow-converts by smoking opium.

1707. First they were respectable men when they began to smoke opium, were they not?—Yes, but they got degraded by that process, and then the constant progress of degradation that goes on with all the victims of excessive use of opium. You could not trust them.

1708. With regard to the proportions which you gave us, were you speaking from your own personal knowledge in 1864?—Yes.

1709. With regard to the proportions of opium smokers, you have had no personal opportunity of obtaining information since 1864?—Except of the quantity that is produced and imported.

1710. Calculating from the returns?—From the returns. I know as much about it now as I did then; it is a matter of calculation.

1711. I gather that you have a very strong belief that the Indian Government ought to free themselves from any connexion with the growth of opium?—Certainly.

1712. (*Sir J. Lyall*.) You have a strong feeling that the Indian Government ought to free themselves from direct participation in the growth of opium?—Yes.

1713. I suppose you are aware that the Anti-Opium Society now, does not ask that the Government should abolish its monopoly, and is of opinion that the abolition of the monopoly, and the substitution of an export duty would lead to the largely increased amount of opium sent to China?—I doubt it.

1714. That is the opinion the Society has expressed?—I know, sir, but I do not accept it.

1715. You said that opium smoking is prohibited by a rule of the Church among Christian converts?—Yes.

1716. Is drinking spirits also prohibited?—They never do it; it is done so seldom, that it is not counted; if they did, the same rule would apply to them; but the Chinese do not habitually drink spirits. I have seen drunken men in China, but they do not drink, they are not a drinking people; they do not drink spirits. I would not say that they never do, but it is so seldom, that we never take any particular account of it. I have seen drunken men in China, but very seldom.

1717. In Japan, where the import of opium is prohibited by Government, the drinking of spirits, the same sort of spirit that is used in China, prevails very largely?—Samshee, yes. I believe it does.

1718. And the Japanese Government, as I saw myself when I was there, raises a very heavy revenue from spirits?—Yes.

1719. Do you think it is likely that, if opium smoking were stopped in China, spirit drinking would prevail?—I think not.

Mr.
W. Lockhart,
F.R.C.S.

16 Sept. 1893.

Mr.
W. Lockhart,
F.R.C.S.
16 Sept. 1893.

1720. You think if you could stop the opium smoking that the people would be temperate?—I think they would; they are not disposed to drink spirits; they do not favour the doing of it. As to what the actual advantage would be I will not prophesy; but I think that they would not give way to spirit drinking; I think the Chinese would not do it; they are a stalwart, strong people. After the Anglo-Saxon race I believe they come next; they are splendid soldiers; they are of fine physique, and can exhibit a great amount of strength in their ordinary avocations. I like the Chinese people exceedingly; they are a superior race

The witness withdrew.

Dr. GEORGE DODS, called in and examined.

Dr. G. Dods.

1722. (*Chairman.*) Will you state the positions that you have filled, and the places where you have resided, and the opportunities which you have had of forming a judgment upon the question which has been referred to the consideration of this Commission?—I resided for six years in Canton, and part of the time I had charge of a native hospital. I was 12 years in Hong Kong, and part of the time I had charge of the jail in which there was a large number of Chinese prisoners.

1723. In what service were you engaged; were you under the Government?—No.

1724. In private practice?—Yes, but I was in the Government service when I was attending to the prisoners in Hong Kong prison temporarily.

1725. In the Chinese Government service?—No, Hong Kong; the British Government.

1726. (*Sir W. Roberts.*) Can you tell us generally what are the effects of opium smoking upon the population of those places where you resided?—The effects are not at all evident generally.

1727. You have, of course, seen?—I have seen, of course, numbers of opium smokers, and people have been pointed out who were called victims of the habit, emaciated wretches; but in many cases on making inquiry, I found that these people were dying of some disease, and smoked opium to alleviate their pain; but of course, there are other cases in which the constitution was ruined simply from the use of opium, but I consider them very rare.

1728. And did you think that the habit of opium smoking was prevalent in the population, high and low?—To a moderate degree. A great many of the best men smoke opium, the merchants and officials.

1729. Could you say roughly what proportion of the adult males?—No, I could not.

1730. One in ten, for example?—I should not think so many.

1731. Not so many?—I should not think so.

1732. But the great majority of the consumers smoke moderately?—Moderately, yes.

1733. Under the circumstances you did not observe any harm?—No, on the contrary. For instance, some of the very shrewdest merchants in Canton I have known, before they completed a bargain with our English merchants for tea or silk, to ask him to excuse them for a little while they went home to smoke a pipe of opium, and they came back and concluded the bargain. It cleared their brain, and they could do their business much better.

1734. Such persons never went to an opium shop in their lives?—No, they used opium in a moderate degree.

1735. Did you observe that there was a strong tendency to increase the quantity, or that the habit should degenerate into a vice or an excess?—No, I did not observe that. Perhaps when smokers grew very old and had no business to attend to, then probably they increased the quantity of opium, or in the case of men who were ruined they very often became victims to it just as a drunkard does in this country.

1736. Did you observe that it was very difficult for those who had contracted the habit to throw it off if they were willing?—It would depend upon this very greatly; if they had the mind to stop, they used to come to the hospitals to get some sort of cure, as they called it, for the opium smoking, and in many cases they were relieved of the habit. I used to give them stimulants instead of the opium, and in the case of the prisoners in the jail they were not allowed to use opium at all, and a great many of the criminal classes

of men, very different when they become officers of Government; but in their ordinary life they are a noble set of men, and I extremely like them. I like living among them, and I greatly admire them.

1721. It is the general opinion, I believe, in China and Japan that they are much more trustworthy and honest in business, whether as merchants, or as labourers than the Japanese are; have you not heard that?—They are a better people altogether than the Japanese; the Japanese are far below the Chinese in physique, in mental power, in general ability, and certainly in education.

are opium smokers; and I think in only two occasions did I require to give these prisoners a dose of opium after it was once stopped. The cessation of their stimulant did not seem to do them any harm; of course, they were depressed for a day or two, but it never seemed to do them any harm.

1737. You stopped it suddenly?—Yes, suddenly.

1738. Are you speaking of a large number of cases?—Yes, very large. There were 500 or 600 prisoners in that jail, and I should think fully one half of them would be opium smokers. And my own servants also were opium smokers, at least, some of them were; but they rarely smoked except once a month when they got their pay. It was just part of a sort of amusement in which they indulged when they got their pay. They used to smoke once a month, but at no other time.

1739. They went on a sort of spree?—Exactly; it is the accompaniment to a spree in China. When a man gives a dinner to his friends they always finish up with a pipe of opium.

1740. There must be a good many analogies between the opium habit and the alcohol habit?—Yes. In that respect they indulge in it as a sort of luxury; it is only the rich who can afford to indulge in it really. I have seen some of the natives who live in the marshy districts who say that they could not live there without smoking opium, because they always got fever, and they complain of what it costs them to buy the opium.

1741. (*Mr. Wilson.*) I gather you do not agree with Dr. Lockhart in what he has just said. Would you tell us very briefly in what respects you differ?—I did not notice that I disagreed with him very much. If you will tell me on what points you thought we disagreed.

1742. Do you think you substantially agree?—Well, no; not in all that he said.

1743. Perhaps it would take less time than if I were to ask you questions; you heard all he said, will you tell us on what points you did not agree?

1744. (*Chairman.*) Was there any statement made by Dr. Lockhart in which you do not feel inclined to agree?—I agree with him in the main.

1745. On what points do you disagree?—Well, I do not think there are quite so many opium smokers as he mentions, but then, of course, that varies very much in different parts of China; and then again he remarked that there would not be much drinking going on. That may be in the part of China in which he resided, but I have seen a good deal of spirit-drinking going on, especially in Hong Kong.

1746. (*Mr. Wilson.*) When did you leave China?—I left it in 1877.

1747. I thought you would differ a good deal in regard to the number of persons who are suffering from other diseases and who take opium to alleviate them. I gathered that he considered the proportion of opium smokers who did it to alleviate pain was small?—Was small—yes. I agree with him there too. I merely mention that I have seen some cases which might have been pointed out as opium smokers, and which when I inquired I found to take opium to relieve their pain or their cough.

1748. (*Mr. Mowbray.*) Did you consider that while you were there the tendency increased—the number of opium smokers increased—I think you were in Canton and Hong Kong 18 years altogether?—Yes. I had no means of knowing that.

1749. It was not sufficient to strike your attention if it was so?—No, certainly not; you can only tell that by the increased consumption.

1750. And could you tell at all as to the proportion of the people who smoke native opium or Indian opium? No, I could not do that either. Of course, in Hong Kong they almost always smoke the foreign drug, and

I agree with Dr. Lockhart in saying that I never heard the Chinese blame the English for introducing the drug. The only people I heard blame the English were the American missionaries.

Dr. G. Dods.
16 Sept. 1893.

The witness withdrew.

Mr. DAVID McLAREN called in and examined.

1751. (*Chairman.*) I believe you were formerly president of the Edinburgh Chamber of Commerce?—Yes, for three years.

1752. Am I to understand that in your commercial life you were actively concerned in the trade with China?—No, my lord; not with the direct trade with China. I was engaged all my commercial life in the wholesale tea trade in Scotland; but so far back as 53 years ago—my attention was called to this opium question, because when I was a very young man the tea trade was entirely disorganised by the occurrence of the first war, known as the opium war; and from that time I began to take a very deep interest in it. I should like your Lordship to know that in what I say to-day I do not want to give opinions on the question, but rather to bring forward what facts I have been able to collect, especially from statistics of the trade between India, China, and England.

1753. We shall be happy to receive a general statement from you of your views?—Well, my Lord, if the allegations of the demoralising consequence of the opium indulgence could be proved to a certainty, I should expect to find that the opium trade would not be a profitable trade in the end. I hold that there is nothing more certain, than that a thing cannot be morally wrong and commercially or politically right. I resolved to make an inquiry into the effect of this opium trade on our legitimate trade with China. I do not say that the results which will be brought out are the consequences of the opium trade, but I wish to submit very carefully the figures which I will lay before you. If we saw in a village a public-house, and next door to it a draper's shop, perhaps kept by brothers, and saw the public-house crowded, we would know very well that the draper's shop would come very badly off. Now that is just what I think the figures that I shall bring before you will prove. Perhaps it will be necessary to premise that the trade with China is quite singular in several respects. In the first place, between India and China it was a monopoly in the hands of the East India Company up to the year 1813; and it was a monopoly between the United Kingdom and China up to 1834, when the East India Company's charter terminated. It is admitted on all hands that the trade has been a most anomalous one; so much so, that 12 years after the termination of the East India Company's charter, a special Committee of the House of Commons was appointed to inquire into it. I shall bring before the Commission the result of the inquiry. I have prepared two tables, my Lord, and they will enable you to follow the figures which I give, much more easily. The trade is remarkable for this, that it has been very much affected by changes in the treaty and political relations between the two countries. I do not know that any trade has been so much affected in that way as the China trade has been. Taking the year 1834 as a starting point, the second line on the table before you will show the state of trade between India and China at the time of the expiry of the East India Company's charter. You will see there that the entire export to China in these years following the expiry of the charter, was 3,014,770*l.*; the average annual export of opium in these years was in round figures, 2,000,000*l.*—1,955,236*l.* are the figures—forming, you will observe, 66 per cent. of the amount of the exports as a whole. Then raw cotton, which was the great export of India to China at that time next to opium, was 878,042*l.*, forming 25 per cent. At the same time you will observe that the imports into this country from China were 3,779,385*l.* almost entirely tea; and the average of the exports of British manufactures at that time—entirely in the hands of the East India Company, was 850,159*l.* I now call your Lordship's attention to the next great change that took place, namely, that which followed what was called the opium war. You will find in the next line, during the years 1837, 1838, and 1839—the three years preceding the opium war—the following statistics: The export from India to China had risen to 4,597,476*l.*, and the opium to 3,209,958*l.*, or 69 per cent.; raw cotton was 1,189,162*l.*, or 25 per cent. I will not call

attention to the other columns till afterwards. Then followed the opium war, terminated by the Treaty of Nankin, which forms a good starting point for comparison. I propose to call the attention of the Commission to the three years preceding the opium war, and the four years following it, to see what the results of the Treaty were. By the Treaty of Nankin there were four other ports in addition to Canton opened to British commerce, notably the port of Shanghai at the mouth of the Yangtse-Kiang, and it was reasonably expected that there would be a very large addition to the commerce of this country with China. That, however, was destined to disappointment. You will observe that there was a very great increase in the imports from China. After the Treaty of Nankin they rose to 5,323,388*l.* The exports to China from the United Kingdom were 1,783,888*l.*, but then the exports of opium from India for the same time were 3,712,920*l.*, or 74 per cent. of the entire amount of the exports from that country. The state of the trade was so bad at that time that the Committee to which I have referred was appointed by the House of Commons, Their report, which was a unanimous one, was to the effect that the result of the extended intercourse with China had by no means realised the just expectations which had been naturally founded on a freer access to "so magnificent a market," as they termed it, and they also reported that in the great proportion of the trade, the losses at that time, taking both ways, might be freely stated at from 35 to 40 per cent.

1754. There had been a considerable increase, had there not, in the exports of British produce and manufactures to China?—Yes; I was coming to that. There was a considerable increase in the amount, but the trade was ruinous. Both cotton and woollen manufactures showed a decline on the years preceding the report of the Committee; and the cause they assigned was the difficulty of providing a return from China. They accordingly recommended a reduction of the duty on tea at the earliest period which might seem fit in the wisdom of the House. It was not till 1853 that the reduction began to take place, and then to only a limited extent. The immediate result was as had been anticipated; the greatly increased importation and consumption of tea. Taking the five years before the committee's report, say 1842–46 after the Treaty of Nankin, the average imports from China to the United Kingdom had been 5,323,388*l.*, whereas in the five years following the reduction of the tea duty they were no less than 9,157,001*l.* or a difference of 3,833,613*l.* of which a considerable part, it is right to say, was due to the importation of silk which at that time was very high in price. But the natural expectation that such a greatly increased import from China would be accompanied by a corresponding increased export to China, as the Committee anticipated was entirely disappointed. The average increase, you will observe, of these years after the reduction of the tea duty was only 180,000*l.*, not one twentieth part of the increase of the imports. The Chinese were paid for these largely increased shipments to Britain by a largely increased export of opium, that increase being more than 2½ millions. If you look at the first column you will see that after the Treaty of Nankin it was 3,712,920*l.* and that after the time of the reduction of the tea duty it had risen to 6,365,319*l.* The export of British manufactures average at that period, you will observe, 1,964,242*l.* That brings us to the year 1857, and there is one incidental fact which I should like to bring before the Commission in that year. In that year—one of those which is embraced in the period before you—there were four countries or rather nations, each of which imported almost the same amount from Great Britain, namely about from 1,400,000*l.* to 1,700,000*l.*; these nations were Chili with a population of 1,400,000, Egypt with 4,000,000, Cuba and Domingo with 4,400,000, and China with 400,000,000, and that, you will observe, was 23 years after free trade with China. This small export to China could not be attributed to foreign competition. In the same period the shipments of British produce and manufactures to all countries had more than doubled, instead

Mr.
D. McLaren.

Mr.
D. McLaren.
16 Sept. 1893.

of the fractional increase of the shipments to China. The next great change which took place in the relations between the two countries was effected by the Treaty of Tientsin, negotiated by Lord Elgin, which followed the second China war. The provisions of that treaty, as the Commission are doubtless aware, were very important. The Yangtse-Kiang was opened, up as far as Hankow; other ports also were opened, and—most important of all—the opium importation was now legalised. Up to that time it had been a smuggling trade. If you will allow me to go back upon the Treaty of Nankin—there was one important thing that I forgot to mention, namely, the ceding of the island of Hong Kong, which was given “for the purpose of careening and refitting ships.” These words were put into the treaty, upon the authority of Mr. Matheson—not the Mr. Matheson who was examined here the other day, but his uncle, of Messrs. Jardine, Matheson & Co.—“to pacify the Emperor, who did not contemplate more than that.” Notwithstanding the most strenuous efforts to get the Chinese Government to legalise the importation of opium, at that time, they determinedly refused, and the trade still remained a contraband one. In the course of time the possession of Hong Kong rendered the “receiving ships,” which Mr. Donald Matheson spoke of here the other day, unnecessary, because “go downs” or warehouses were built in Hong Kong, and it very soon became an enormous depôt of opium; and that, notwithstanding that the Government of Britain had entered into a supplementary treaty, in which they bound themselves to discourage smuggling. That treaty was from the very first a dead letter. I have gone back upon that because it introduces the question of the legalising of the opium trade. The results of that great change will be brought out by contrasting the figures of the five years following with those of the years immediately preceding, of which I have already spoken. The Commission will observe that the results there brought out are, in round figures, an increase in the imports from China to the United Kingdom of 729,000*l.*; the exact figures are 9,886,403*l.*, against 9,157,001*l.*; there is an increase in the exports from the United Kingdom to China of 2,476,160*l.*; but there is an increase of the exports of opium to China of 3,174,892*l.* I cannot tell how the trade with this country was distributed amongst the various Chinese ports; but I shall not be surprised if it be found that there was no great increase, if any, at the port of Canton; not only because the opening of other ports to the north threw it to a disadvantage, but in consequence of the fearful incident, if I might call it so, of the bombardment of Canton for 27 hours, while during that time only two shots were fired from the walls upon our fleet. That you will find, my Lord, in Lord Elgin's private letters. I cannot too strongly press upon the attention of the Commission the importance of studying that volume of Lord Elgin's private letters. I have a suspicion that, if one could get access to the originals, the Commission would perhaps find that even more information is to be got there. He says, as regards the origin of the war, “that wretched ‘question of the ‘Arrow’ is a scandal to us. Nothing could be more contemptible than the origin of the ‘existing quarrel. I thought bitterly of those, who for ‘the most selfish objects are trampling under foot ‘the—”

1755. I do not think we want to go any further into the history of the Chinese wars?—I will afterwards—

1756. We have heard very full statements on both sides, and we do not want to pursue that subject further?—Very well, my Lord.

1757. It has really practically nothing to do with the question which has been referred to the consideration of this Commission?—Very good, I was not aware of that. Then the next two lines of the table refer to periods of five years after the Che-foo Convention, and in the last line which I added in writing this morning, you will find the present state of the commercial figures. I ought to say that the statistics of India, are given in parts of two years, whilst the statistics of this country are given from the 1st of January to the 31st of December. The average of the annual exports from India to China during 1888—1891, was 13,956,065 *Rx.* Of these opium was 8,207,818 *Rx.* That was about 58½ per cent. The Commission will note how this per-centage has varied. It is now down to a lower figure than it was 60 years ago. It is now less than 60 per cent. of the whole export from India to China. Raw cotton on the other hand has fallen

from 34 per cent. to 2 per cent., but for a very obvious reason. The people in India are now using their own cotton, and part of the export to China is yarn, which has been manufactured in India. There is another remarkable figure here, the imports from China to the United Kingdom are now down to 6,717,512*l.*, a very great difference. You will observe that from 1878 to 1882 it was more than 12,000,000*l.*, that diminution is consequent upon the smaller importation of tea—the greater part of what is consumed here coming now from India.

1758. India?—Yes. The next figure is a more important one, namely, the average exports of British produce to China. These are now 8,585,911*l.*, and if you will cast your eye to the line above that, you will find that the amount of our export to China is now, off and on, about 8,000,000*l.* It is needless to follow any comparison further in this line, because there are some things that complicate it so much. There is the great increase of the opium growth in China; there is the great increase of the tea imported from India, and there is notably the very rapid falling of the exchange, which make it impossible to institute satisfactory comparisons. But if the Commission will turn to the next table there is something very interesting there. When Lord Elgin went out in 1857, he negotiated two treaties; the one was a treaty with China legalising the importation of opium into that country; the other was a treaty with Japan by which opium was declared to be contraband. That treaty has been most rigorously enforced. There is not an ounce of opium imported into Japan excepting strictly for medicine. They have enforced that in a way that never could have been anticipated. I ought to have said that the United States had made a similar treaty before Lord Elgin went there, so that our policy, which hitherto had been to push the export of opium to Asiatic countries,—for example, notably in Siam,—had to be entirely departed from; and our relations with Japan continue on that footing till this day. Now, we had no intercourse whatever with Japan before that treaty, and if your Lordship will glance at the state of trade, given every four years in succession, the result is very striking. It begins with 1860—63, the average for those years was 481,792*l.*, and it goes on—I need not quote the figures, they are before you—but you will observe it rises steadily until the last four years in the table—where it is 3,707,444*l.*, that is to say, very nearly the half of what we send to China with a population of 400,000,000, while that of Japan is estimated at about 40 millions. Now, as I said, I do not express any opinion; I submit these figures for the Commission to inquire into. I believe it is almost impossible to resist the conclusion that the very flourishing state of the trade with Japan, as compared that with China, is due to the absence of the disturbing element of opium. But that is not all—

1759. You yourself desire to draw that inference?—I draw that inference, I may be wrong, but I submit the figures.

1760. It is an opinion?—That is an opinion, but these are facts. I make myself responsible for these figures.

1761. You recognise that Chinese ability to purchase British manufactures and produce has been prejudicially affected, has it not, by the deterioration in the quality of their tea; the Chinese tea has been less in demand in England?—No doubt.

1762. And therefore Chinese ability to buy British manufactures and produce has, to that extent, been impaired?—It has to that extent been impaired.

1763. That is a consideration apart from the opium question altogether; is it not?—Of course, to that extent.

1764. So far as it goes?—Yes, but then on the other hand, they are importing opium very largely from India. If you look back—I forgot to call your Lordship's attention to the note at the foot of the preceding table—it will be observed there, “The column Total of ‘Exports from India to China includes treasure,’ but that is nothing, no treasure goes immediately to China. ‘The balance of treasure imported from China to India, ‘over that exported from India to China, for the thirty ‘years between 1857 and 1887, was *Rx.* 91,254,274.” Now I am not competent to give an opinion upon the effect of the importation of silver into China upon the exchange—

1765. I am afraid we must not go into that as an opium question?—I say I cannot do it, but that is a fact which surely should be noted in the present state of affairs in India. The immense amount of treasure which has been coming into India from China. But coming back to the Japan table, there is a small column in manuscript you will observe which has much interest, namely, the exports from India to Japan. Not only has our own trade from the United Kingdom to Japan increased to a large extent, but there is a very flourishing trade apparently going on from India to Japan.

1766. In what articles?—Not one ounce of it opium.

1767. No, I know that?—I cannot analyse them very materially.

1768. But it is not a trade in opium, we know that?—No, a considerable proportion, I think, is yarn manufacture.

1769. Probably from the Bombay mills?—From mills in Bombay, yes. I did not take those out, for I had not time to do that this morning, but the last figures I have, I think, are, Rx. 1,289,787. They have risen every year from India to Japan; and that is in addition to the 4,000,000, which we send to Japan from this country. I think that the conclusion of the whole matter is, in the pithy words of the Taoutai (chief magistrate) of Shanghai, he said, "Cease sending us so much opium," and we will be able to take your manufactures."

1770. If they spend their money in buying opium, they cannot afford to buy our manufactures?—That is just what he said. I have the Blue Book here, but you will find it in the evidence as given by Mr. Montgomery Martin, the Colonial Treasurer for Hong Kong. That concludes, my Lord, the evidence which I have to give in regard to the trade of this country with China and India. But when the Commission go to India they will have a very important subject to investigate, namely, the effect of the cultivation of opium in India, both economically and morally. I have a table here which is very interesting, giving the number of acres from the year 1848 up to the year 1873, which were set aside in British territory for the growth of the poppy.

1771. We have had that from other witnesses?—Oh, very good; but I do not know if attention was called to this, that it is very singular how the product of an acre of poppy land is diminishing from period to period. The first three years, from 1848 to 1851, which I have here, the product seems to have been 20 lbs. 4 oz. an acre. The next three years I have down here are from 1859 to 1862. I take three years at the beginning of the series, three years in the middle, and three years at the end. From 1859 to 1862 the product seems to have been 15 lbs. 5 ozs. an acre; in 1870 to 1873 it had fallen to 12 lbs. 4 ozs. an acre; and I have a table beyond that, but I have not been able to verify it, though I have it here; therefore I do not wish to give any more than up to the date I have mentioned.

1772. Any information of this kind the Commission will have opportunities of gathering very fully in the course of their local inquiry?—Yes, I merely call the attention of the Commission to it before going out. Well, there is only one other question about that, which I am very anxious to bring before the Commission. There was some doubt expressed as to what had been the nature of the policy of the opium department in India, I think it was Mr. Fenn who said that he had seen something in print which made him think they were willing to take as large a crop as could be got. This is Mr. Wilson's statement of policy in his last Budget speech.

1773. Of what date?—18th February 1860.

1774. That is a long time ago?—Oh, yes. I am not aware, however, that the policy has been departed from. "His Honour pointed out that in Bengal during the last three or four years all the leading crops—wheat, rice, potatoes, and sugar—had increased in price from 70 to 100 per cent., and he urged the necessity of a further rise in the price paid for opium that it might maintain its ground against the other articles. The Government of India have therefore sanctioned a further rise to four rupees per seer, which we hope will have the necessary effect and secure us against a further decline in the cultivation." He says further: "I have no doubt our true policy is to keep up the supply to the full demand and to obtain a moderate price for a large quantity." Those were his words.

1775. Well that was the view of Mr. Wilson who was in charge of the Finance of India more than 30 years ago?—Yes, and I am not aware that it has been changed since.

1776. We shall obtain the latest view in the course of our local inquiry in India?—The only later one that I have is Sir Cecil Beadon. In his evidence before the Indian Finance Committee of the House of Commons—

1777. (Mr. Mowbray.) That, I think, was 22 years ago—1871?—If there has been any change made since then it has not fallen under my notice. I am speaking of the question of policy.

1778. (Chairman.) I think we have had it sufficiently established that the Indian Government recognise that the opium income is an exceedingly precarious source of income, and looking at it purely from a financial point of view their desire is to be entirely independent, or as far as possible independent of their opium revenue?—That is so. That opinion of the precariousness of the opium revenue is as far back as 1831. The Court of Directors in Leadenhall Street warned the Indian Government over and over again about the precarious nature of the opium revenue. The only other point I should like to submit to your Lordship, is this:—I see there have been considerable differences of evidence brought before the Commission on some points, more especially differences in the evidence brought forward by missionaries and that brought forward by other witnesses. Now I have not a single word of reflection against missionaries, but I think it is quite right that the Commission should take note of what the Government officials have to say in this matter and of what the Government itself has said. I may mention first that of the East India Company, to the effect that the Indian Government have always recognised the pernicious character of opium. Lord Cornwallis defended the East India Company's maintaining the monopoly of opium manufacture on the ground of their thereby being able to restrain the consumption of "the pernicious drug." It is specially to be noted that in 1817, the East India Company's directors said, "Were it possible to prevent the use of the drug altogether, except strictly for the purpose of medicine, we would gladly do it in compassion to mankind; but this being absolutely impossible we can only endeavour to regulate and palliate an evil which cannot be eradicated." And it is a very striking fact that in the last document which was presented by the East India Company to the Government before the sovereignty of India was taken from them, one of their pleas for retaining the sovereignty of India in their hands was that it would enable them to restrain the consumption of so pernicious a drug. That is the statement to the Government of this country. Then the Government officials—I ask the attention of the Commission especially to this evidence—Mr. Majoribanks—

1779. On what date?—I forget the date; it was before the China war. I am speaking now of the testimony as regards the effect of opium which he had seen in Canton. You are aware that the East India Company did not sell opium in Canton, it was sold by private merchants, but Mr. Majoribanks was the president of the East India Company's Select Committee of Supercargoes at Canton for the disposal of the Company's property and purchasing teas, and he said:—"Opium can only be regarded, except where used as a medicine, as a pernicious poison. The misery and demoralization caused by it are almost beyond belief. Any man who has witnessed its frightful ravages and demoralizing effects in China must feel deeply on this subject." That is the statement of Mr. Majoribanks. Then I have to the same effect Sir George Staunton.

1780. I think we have had this sufficiently put before us; the opinion of what may be called the early authorities has been very fully set before us?—Yes. Coming down later, then, there is the very decided statement of Sir Thomas Wade, who was here yesterday.

1781. Yes, but we have had his view, both the view he expressed now and his earlier view, both have been set before us?—I observe he attributed his change a good deal—

1782. But we had that very clearly from him yesterday?—He attributed his change of view as to the moral results of opium chiefly to the action of the Anti-

Mr.
D. McLaren.
16 Sept. 1893.

Mr.
D. McLaren.
16 Sept. 1893.

Opium Association. I need not go further back, but I have the testimony of Mr. Montgomery Martin, and of Governor Pope Hennessey—the one as Treasurer and the other as Governor of Hong Kong.

1,783. We have had so many witnesses who have given us their personal impressions, that I do not think we want to go into evidence at second hand?—Then, there was Mr. Lay also, who has expressed an opinion.

1,784. Well, we have had Mr. Lay here?—Well, he said that this opium trade was ham-stringing the Chinese nation.

1,785. Well, we have heard Mr. Lay himself?—Well, that is what he said before. I think that that may conclude my evidence, unless, by the way, the question has been raised, whether we forced this trade upon China or not, but your Lordship says that that is outside the purview of the Commission.

1,786. We had that very fully yesterday?—Yes, Sometime it is alleged that there is considerable pressure used upon the ryots to grow the poppy.

1,787. Well, we shall hear of that in India?—Yes. Then I would call your Lordship's attention especially to the refusal of the Bombay Government to grant licences for the cultivation of the poppy upon the grounds of its demoralising influences. They said if opium cultivation were allowed in Scinde it could not consistently be prohibited in the rest of the Presidency.

1,788. That is in the public documents that are before us?—I am not aware. It was my duty to gather up—

1,789. My duty is to save the time of the Commission where I know that you are entering upon points that have already been placed before us. We are very much obliged to you for the evidence you have given, and the interesting commercial figures you have prepared.

1,790. (*Sir J. Lyall.*) Your argument, sir, strikes me as being mainly from an English commercial point of view?—Well, chiefly.

1,791. You would destroy an important Indian export trade, but the compensatory profit you expect, I gather, would go mainly to England, in fact, India is your public-house to be put down, and England is your draper's shop?—They are pretty analogous in the present state of exports from the two countries.

1,791a. You mentioned that a great export of Indian yarns and piece goods has sprung up from Bombay to China?—Yes, of yarns chiefly.

1,792. And it has, I believe, continued to increase, has it not?—I think it has. The last year I saw it had very materially increased. I have got here what is not before you; it may answer your question. In 1883 to 1887 the yearly exports from India to China averaged 13,036,266*l.*, of which opium was 9,770,775*l.*, leaving for all other produce 3,265,491*l.*; but in the last years 1888 to 1891 the average yearly figures are these: exports from India 13,956,065*l.*, and opium 8,207,818*l.*, leaving for all other articles 5,748,247*l.*

1,793. That export of Indian yarns and piece goods does not appear in these tables of yours, does it?—No, for this reason, that when the tables were begun there was no such thing; it was raw cotton then that was the export.

1,794. Does not the substitution of Bombay yarns and fabrics for British goods in the China market account for some of the decrease or absence of increase of British exports of yarns to China?—I think it might, *pro tanto*, certainly.

1,795. Is not the small import of British manufacture to China largely due to the conservative character of the Chinese in matters of dress, food, luxuries, &c., which makes them especially slow amongst all nations in adopting foreign clothes, ornaments, articles of luxury, or of food?—That was not the opinion of the House of Commons. There has been no diversity about that, they say most distinctly in their report that it was not due to any disinclination to purchase English manufactures.

1,796. With regard to the contrast between the growth of Japanese trade as compared with China trade, is not the character of the Japanese, at any rate, very different in that respect from that of the Chinese?—I suppose it is.

1,797. Did you ever see a Japanese gentleman in England in Japanese costume?—I am not aware that I have.

1,798. You do see a Chinaman though?—Oh, yes.

1,799. He never wears any other costume than his own native costume?—Oh, they are totally different, I admit that.

1,800. The Japanese always used an European umbrella till he began to make them in the European style himself?—Yes.

1,801. The Chinaman generally uses a native umbrella?—Yes.

1,802. You agree, I understand, with the Anti-Opium Society that on moral grounds the growth of the poppy in India, and the export of Indian opium to China ought to be prohibited?—Yes. I am not alone in that. I think it is prohibited, will you allow me to say, most rigorously at this moment in the Presidencies of Bengal and Bombay.

1,803. You would stop the growth of the poppy and the export of opium to China?—Of course, if the poppy were prohibited to be grown there would be no export to China of opium; but what I was anxious to call attention to was this: One of the papers which I will put in to-day is the Opium Act of 1878, and the first article on that Act is to the following effect: "The following are prohibited:—(a.) The growth of the poppy" and so forth. You are quite familiar with it. All that is prohibited over the whole of India.

1,804. Not the whole of India?—Yes.

1,805-6. Not the whole of British India, it is not prohibited in the Punjab for instance?—I know that the Punjab is exceptional, but to read that Act one would not gather that from it.

1,807. But do you think that is a bad thing?—Which, the prohibition?

1,808. Yes?—A capital thing—all that the Government have to do is just to withdraw the license.

1,809. That is, you do agree that it should be prohibited?—Yes.

1,810. Tobacco is a poison in the same sense as opium, is it not?—I neither chew tobacco nor smoke tobacco, but—allow me to say—it is a very singular thing that you should mention that—tobacco is entirely prohibited in the British Islands for revenue considerations, for revenue considerations not one leaf of tobacco is allowed to be grown.

1,811. Just as opium in Bengal for revenue considerations?—In Bombay you mean.

1,812. No, in Bengal?—It is not prohibited in Bengal.

1,813. Well, it is exactly the same thing, to keep the whole thing in the hands of Government?—The prohibition in India is in Bombay and Madras for the sake of revenue, and the prohibition of tobacco in this country is for the same reason.

1,814. Tobacco you say is a poison?—Yes.

1,815. There have been Anti-Tobacco Societies as well as Anti-Opium Societies, have there not?—I am not aware, I am not a member of any such society at any rate.

1,816. Have you ever read the account given in proceedings of Anti-Tobacco Societies?—No, I am not conversant with such accounts.

1,817. Of the evil effects of tobacco smoking?—I have not read that literature, but I am quite aware that there is not much good comes out of it. I think some of my best friends—I have a very eminent friend, one of the most eminent preachers of the day, and he enjoys his pipe very well, but I think he would be as well without it. But that is a matter of opinion, I am not here for opinions, but to give facts.

1,818. I think it may be admitted that excessive tobacco smoking destroys the nerve, involves loss of memory, and loss of mental and bodily energy, and sometimes leads to disease and death; do you not think that may be admitted?—Suppose I admit that, that would be no reason for prohibiting tobacco as compared with opium. If one man comes to that unfortunate end with tobacco, there are 50 or 100 that do so from opium.

1,819. At any rate it is a useless and expensive habit, is it not?—I will not pronounce an opinion, I have never tried it, some people think they would be very much the better for it, I should be very sorry to condemn it.

1820. Suppose an anti-tobacco society in Spain, or through the Spanish Cortes, were to propose to force upon the Island of Cuba, which is a Spanish dependency, the prohibition of the growth of tobacco or the export of Havannah cigars to America, would it not be similar to the proposal that England should prohibit the growth of the poppy in India, or the export of Indian opium to China, where the Indian opium, among opium smokers, holds much the same position as Havannah tobacco does among American tobacco smokers?—I cannot say that I see the parallel; but as you mention that, I may just mention I hold in my hand a mercantile opinion on this question. It is not from the Chamber of Commerce of Edinburgh, of which mention has been made—where I presided—but from another and older body, the Merchant Company of Edinburgh, and they say:—

“That while your petitioners are desirous that the principles of free trade, now happily recognised in the legislation of this country, should be maintained in all their integrity, they nevertheless consider that a traffic, the demoralising results of which are “essential to and “inseparable from its existence,” is placed beyond the pale of the operation of these principles. Your petitioners also consider that such a traffic ought not to be made a source of public revenue in any form, but that it ought to be prohibited by every Government, as are other trades which are contrary to the moral sense of mankind.

“May it, therefore, please your honourable House to give your sanction to such measures as shall be necessary effectually to prohibit the growth of the poppy and the manufacture of opium throughout the whole of British India; and also to prohibit its exportation, when grown and manufactured in independent Indian States, from all the British ports in India; and your petitioners will ever pray.

“Signed in name and by appointment of a stated general meeting of the Company of Merchants, held within their hall, Hunter’s Square, Edinburgh, this 7th day of February, in Eighteen hundred and fifty-nine.

“ROBERT CHAMBERS, Master.”

1821. You do not think it is a parallel case?—No. This body many years ago asked the House of Commons to prohibit it under the signature of Robert Chambers, the well-known publisher, who was then Master of the Merchant Company.

1822. (*Mr. Mowbray.*) I suppose with regard to these statistics which you have put in, you would be as ready as anybody to admit that it is very difficult to draw any conclusions as to trade between one country and another, unless you took into consideration the trade with other countries too?—I quite admit that.

1823. That there may be what I should call a three-cornered trade?—There is that here, India, China, England.

1824. Exactly. Then I wanted to draw your attention to some figures which have been laid before us to-day; I wanted to draw your attention to the figures in the line 1842–1846, and the line 1854–1858?—Yes.

1825. You pointed out to us that the export of British goods to China in those two periods shows a very small increase?—Yes.

1826. And you said that that was a very disappointing thing?—It was.

1827. And you also showed us that there was a considerable increase in the export of opium from India to China?—Yes, two and a half millions.

1828. Now, I wish to draw your attention to the figures in the column of the export of British produce to India, which shows a very large increase in those two periods—an increase of 6,000,000?—Yes.

1829. And also to the very enormously increased imports from China to the United Kingdom, which show an increase of nearly 4,000,000?—Which year is that.

1830. I am taking the same two periods, 1842–46 and 1854–1858, in your paper?—Yes.

1831. An increase of nearly 4,000,000?—Yes.

1832. From 5,300,000, odd to 9,100,000?—Yes.

1833. Well, now I wish to put it to you whether it is not possible that the increase in British trade to China, which might have been expected, went directly in an increase in British trade to India, and an increase in the Indian trade of opium to China?—In the first place I said, when I had the honour of being summoned here,

that I am not here to give opinions so much as to present the facts for the Commission to form their own conclusions; but I think there is not the slightest doubt that a large part of the importation of goods from China to this country were paid for by opium from India to China. There is no doubt about that; that is what I want to prove. A man sends home a quantity of tea to this country—10,000*l.* worth—and the importer of the tea, when he finds that he cannot get manufactures to send out, except at a loss, sends an order to India, and opium is sent in payment.

1834. I wish to ask you whether it is not possible that although you do not get the increase directly with China you do get an increase, an increase which here figures as 6,000,000*l.* in the exports in that period to India?—It is very possible; but you will observe that the trade with India has been increasing very steadily all through, and also along with that, the next column—the trade to all countries. If British trade with China has been falling off it is not because we have been losing our ground with other countries.

1835. But that suggestion of mine is a possible interpretation of your figures?—It is well worth consideration.

1836. Then the only other point about your figures I should like to ask you about is that the trade with China, so far as I understand those figures, for the last 15 years has been practically stationary?—Very much so.

1837. But that the export of opium from India to China during the corresponding period has been very largely reduced?—Very largely reduced indeed. Of course the reason for that is obvious. The enormous increase of poppy growth in China.

1838. Still the reduction of the export of opium from India to China has not led to a corresponding increase of direct export from England to China?—No, for this very good reason, that the Chinese were smoking their own opium, and were no more able to buy our manufactures than if they had smoked Indian opium.

1839. Are you of the opinion that if the Indian Government were to prohibit the export of Indian opium, the smoking of native opium would cease?—I think Sir Rutherford Alcock came all the way from Peking to Simla, and expressed his opinion at that time; he said, “There is something at work in the Chinese Government’s mind which makes me persuaded they “would give up their revenue from opium to-morrow “if we would do it.”

1840. The only other point I should like to put to you is that the trade with Japan, which has grown so enormously, according to your figures, in the last 10 years is practically a new trade?—Excuse me, you cannot call it a new trade.

1841. Not perhaps in the last 10 years?—No.

1842. But taking from the original starting of your figures which was 30 years ago?—30 years ago.

1843. Yes?—Why I do not call it a new trade; 30 years ago, as things go now-a-days. We do not call that a new trade.

1844. Japan 30 years ago was a new market?—It was a new market then, yes.

1845. And would you not naturally expect that trade, with an entirely new market in the first 30 years for which that market was open, would increase in a larger ratio than with a country which had previously been open?—I should think it would increase in a larger ratio, certainly for the first 8 or 10 years; but that will not account for the contrast when you come up 20 or 30 years. May I say about that that the increase with Japan has been a very steady increase. My tables do not give the figures for last year; but the Blue Books show that the trade with Japan has not increased in the last year. That can be seen by looking at the Blue Book; but however that may be, there is a very remarkable increase, you will observe, of the trade to India, in this last table, which you are now examining me upon. The periods are different from those in the previous table. They are the regular averages of every consecutive four years from 1860, and to begin with they are 19,000,000 in the first four years, and when we come up to the last they are 35,500,000. So that our trade with India has very steadily increased.

1846. Has nearly doubled?—Well, not quite; roughly speaking.

Mr.
D. McLaren.
16 Sept. 1893.

Mr.
D. McLaren.
16 Sept. 1393.

1847. If we were to take the same figures with regard to China, I think you will find the figures have very nearly doubled too?—Yes.

1848. I admit they are much smaller?—Yes, but what were they when they began? If they begin small they will very soon double.

1849. (Mr. Wilson.) The general purport of your evidence is, it would appear from figures which you have put before us, that in your opinion if the opium trade with China were to cease, we might expect a considerable increase of British exports to China?—I have very little doubt of it.

1850. That would be a gain to England; would not that be a serious financial loss to India?—If no substitute could be got, it would; but I do not think it follows of necessity that the only resource of India in reserve is in opium. I may mention I spoke about the acreage which is given to poppy. I speak under the correction of gentlemen who know better than I do,—poppy land is generally the very best land, and the best irrigated land. An acre of such land, according to the opinion of an eminent agriculturist in Scotland, of whom I inquired, would produce about 1 ton of wheat or 7 tons of potatoes, instead of which it produces 12 lbs. 4 oz. of opium, if so much now. I cannot help thinking that there is surely some room for development there of what would be a material benefit both to the people of India and to the revenue.

1851. I think reference was made to some trade in cotton to China; is there any trade in manufactured cotton from India to China now?—Manufactured cotton?

1852. Yes?—Yes, there is some now—not so much as of yarn twist.

1853. Yarn?—Yes.

1854. Would you think it at all likely that that would increase to any substantial extent?—I am not at all an authority on that subject. I have not been in India or China, nor have I been in that trade. I hand those figures to the Commission for their examination.

1855. (Chairman.) Mr. McLaren, summing up your evidence as given us, does it come to this, that appearing before us as a commercial man you have wished to press upon the Commission that it is advantageous to British commercial interests to prohibit the export of opium from India to China?—That is it.

1856. And has it not been your contention that, if China spent less on the purchase of opium from India, she might possibly be able to buy British manufactures more freely?—I said I would not express an opinion, but really I think that is self-evident.

1857. That is your view of it?—Yes.

1858. Then you have called attention to the stationary condition of the export trade in British manufactures to China, and you have compared it with the more progressive condition of our export trade to Japan?—Yes.

1859. China being a country which takes opium largely, and Japan being a country which refuses to import opium?—In which it is contraband altogether.

1860. I think you have said that in your opinion the ability of China to pay for British goods has been prejudicially affected by the large expenditure by China in the purchase of Indian opium?—That is my own opinion.

1861. That is your view, is it not?—But it is also the opinion of Chinese statesmen. I quoted the Taoutai, of Shanghai, who summed it up in the pithy saying, "Cease sending us your opium, and we will be able to buy your manufactures."

1862. I think, to conclude, you have also admitted yourself that it may be the case that China has become less able to pay for British goods because Chinese teas have deteriorated in quality, and Indian tea has become more popular in the British market?—Quite so.

The witness withdrew after putting in the following Tables, which are printed as part of his evidence:—

[Trade Statistics (Tables I. and II.) submitted by Mr. David McLaren to the Commission, and cited repeatedly in his evidence given above].

I.

STATISTICS OF TRADE between INDIA, CHINA, JAPAN, and the UNITED KINGDOM.

Period.	Average Annual Exports from India to China.					Average Annual Imports; China to United Kingdom.	Average Annual Exports of British produce and manufactures to			
	Opium.	Per cent.	Cotton.	Per cent.	Total.		China.	India.	All Countries.	Period.
1821-25. (Statistics imperfect at this period.)	Rx. 1,058,252 (This for year 1827.)	54	Rx. 670,455 (This for year 1825.)	34	Rx. 1,900,091	£ 3,082,109	£ 610,637	£ 3,662,012 (This for year 1827.)	—	1821-25
1833-35. East India Company Monopoly expired 1834.	1,955,236	66	878,042	25	3,014,770	3,779,385	850,159	2,877,881	—	1833-35
1837-39. Preceding the Opium War.	3,209,958	69	1,189,162	25	4,597,476	4,273,858	911,560	4,079,259	44,782,320	1837-39
1842-46. After Treaty of Nankin.	3,712,920	74	1,097,577	21	5,013,459	5,323,388	1,783,888	6,841,661	53,997,893	1842-46
1854-58. Preceding the second China War.	6,365,319	72	673,587	9	7,333,728	9,157,001	1,964,242	12,824,921	109,474,924	1854-58
1859-62. After Treaty of Tientsin.	9,540,211	87	1,068,745	9	10,074,650	9,886,403	4,440,402	18,857,904	128,856,683	1859-62
1878-82. Under Chefoo Convention.	11,909,815	84	811,461	5	14,162,788	12,662,927	8,054,823	20,697,715	216,586,191	1878-82
1883-87.	9,770,775	75	627,572	4	13,036,266	9,951,754	7,956,468	33,807,300	221,943,231	1883-87
1888-91.	8,207,818	58½	325,318	2	18,936,065	6,717,512	8,585,911	32,078,482	248,558,960	1888-91

N.B.—"Rx" is the sign for 10 rupees, formerly equivalent to 1*l.* or nearly so, before the fall in exchange. The column Total of exports from India to China includes Treasure. The balance of Treasure imported from China to India, over that exported from India to China, for the 30 years between 1857 and 1887, was Rx 91,234,274. The returns consulted do not give Treasure statistics of an earlier date.

The foregoing table is compiled for the first four columns from a continuous series of returns, "India and China (Exports and Imports)," 38, Session 2—1859: 347—1871: and 224—1888. The averages in the remaining columns are compiled from the abstracts of the Board of Trade Returns—in the greater part of the Table, from the abstracts given in Oliver and Boyd's Almanac, in the remainder from the official returns.

II.

STATISTICS OF INDIA EXPORTS TO JAPAN and of BRITISH EXPORTS TO JAPAN, CHINA, and INDIA.

Mr.
D. McLaren.
16 Sept. 1893.

Annual Export of Indian Produce and Manufactures to Japan from 1885-6 to 1891-2.			Export of British Manufactures and Produce in Periods of Four Years consecutively from 1860 to 1891.			
Years.	Rx.		Average of Years.	Japan.	China.	India, including Strait Settlements and Ceylon.*
1885-6	273,504		1860-63	£ 481,792	£ 4,298,490	£ 19,015,796
1886-7	374,089		1864-67	1,298,713	6,202,285	22,518,137
1887-8	711,994		1868-71	1,436,337	9,108,834	21,790,747
1888-9	1,035,305		1872-75	1,846,177	8,680,557	25,411,503
1889-90	1,218,998		1876-79	2,372,364	7,452,775	26,037,020
1890-91	1,210,276		1880-83	2,627,812	8,295,891	33,417,794
1891-92	1,289,787		1884-87	2,509,236	8,166,521	33,453,342
			1888-91	3,707,444	8,585,911	35,517,083

* It will be observed that in this Table the column for "India" includes the Strait Settlements and Ceylon; in the other Table, India only is included under that heading. Hence the difference in the figures in the last line of that column in the two Tables.

Rev. T. G. SELBY called in and examined.

1863. (*Chairman.*) You have been a missionary in China in connexion with the Wesleyan Mission?—Yes, I was 12 years in the interior of China.

1864. I believe you have published a pamphlet on the subject which has been referred to the consideration of this Commission?—Yes, your Lordship.

1865. Will you briefly state to us what are the points that you wish to put before the Commission?—I have read carefully through the evidence given by the missionaries who have spoken; I do not wish to go over the same ground again.

1866. Thank you; we are obliged to limit repetitions?—I am in almost complete agreement, and I believe that evidence is very conscientious and very carefully sifted.

1867. I should like to ask you one question which you have suggested. Can you give us any explanation of the conflicting accounts which have been given by European residents in China as to the effects of opium smoking?—I think that the missionaries come into contact with very much larger numbers of the Chinese people. If I may be allowed to take my own experience as an illustration, I have addressed 100 or 200 Chinamen every day for 12 years, and the pew in China has perfect liberty of reply. Very long discussions always follow the addresses given in mission halls, and we get at a very wide area of Chinese opinion in this way. Some of the officials of the British Government in the different parts of China, whilst they are admirable Chinese scholars, do not speak the local dialects. They get their information at second hand; we get ours at direct hand from the Chinese masses themselves, and I think that the judgment of the missionaries represents a very much wider observation of Chinese life than is possible even to merchants or to consular officials.

1868. How many years were you in China?—12 years, your Lordship.

1869. What parts of China have you resided in?—In the Canton Province, in the town of Fatshan for seven years, and in the city of Shih-Chau-Foo, on the Canton North River, for four or five years.

1870. You have been kind enough to place upon each of our desks a pamphlet, entitled "The Poppy Harvest. A Study of Anglo-Indian Ethics"?—Yes.

1871. I presume that that pamphlet represents your deliberate views on this question?—Certainly.

1872. I will promise faithfully to read the pamphlet?—Thank you.

1873. I have no doubt my colleagues will be equally prepared to give it their attention. And may we take it that that pamphlet is a complete general summary of the results which you have arrived at from your con-

siderable experience in China?—Certainly. I can sustain it by further evidence if it is wished for on any of these points.

1874. Well, we have been hearing, of course, as you know during several long days, important evidence on this subject, and, as you have said, it is very valuable to hear from you that you in a general sense confirm what has been stated to us on this subject by the missionaries who have been examined. I do not think it will advance the case if I ask you to repeat what you have already, in the general statement that you have made, confirmed?—Certainly.

1875. (*Mr. Pease.*) How far do you think these pictures represent current public opinion upon the opium question in China?—They are drawn from Chinese sources entirely; the colouring only is English. I have met with them distributed through every part of the Canton Province; in some parts of the Kwang-si Province as well. I think that they very fairly reflect the average opinion of the Chinese themselves upon the subject.

1876. (*Mr. Wilson.*) I think you said in your opening sentence that you agreed in almost every particular with the evidence which has previously been given here by other missionaries?—Yes.

1877. Are there any points upon which you do not agree; that you would like to qualify at all?—No, I do not know that there are. The guesses at the percentages of smokers were, of course, very vague. I did form an estimate once of the per-centage of the smokers and of the per-centage of the mortality amongst the smokers through opium smoking. It was by a rough and ready method. I sent my teacher round to every opium shop in the city of Shih-Chau-Foo. I collected from each proprietor statistics of amounts sold each day. The Chinese opium smoker generally buys twice a day because there is a morning and evening boiling of the opium, and my conclusion was, taking the use of an ounce of opium as the line at which it was almost sure to become fatal in the course of a few years, that the opium we supplied to the Chinese cost China at the very lowest estimate half to three-quarters of a million lives every year, besides, of course, the Chinese who were demoralised, and the women and children who suffered through the opium debauchery of the head of the household.

1878. (*Sir W. Roberts.*) How did you arrive at the conclusion that the amount of opium supplied through India was responsible for the loss, I think you said of three-quarters of a million lives?—I got out tables of the amounts consumed by certain numbers of opium smokers, and then where the ounce was consumed daily, I took that as a proof of the fact that it would

Rev.
T. G. Selby.

Rec.
T. G. Selby.
16 Sept. 1893.

probably prove fatal in the course of a few years, and then I compared that with the total import of Indian opium into China.

1879. And was your assumption, as it were, that this ounce would be given daily to each man?—To one smoker, I presume.

1880. At a single dose?—Well, it would be smoked in the course of the day. I have known exceptional cases where Chinamen have smoked two or three ounces a day. I know the case of one of the Chinese officials who had servants standing by his bedside getting his pipes ready the whole of the day. Of course these are very extraordinary cases, and opium smoking very often proves fatal at a much earlier period than that, in fact, comparatively small doses in some cases prove very debilitating, and at times fatal. The temperament of the smoker has to be taken into account, the occupation, the food, and many other things.

The witness withdrew.

Deputy-Surgeon-General W. P. PARTRIDGE called in and examined.

1884. (*Chairman.*) Will you state to us what means you have had from your previous experience of forming a judgment upon the matters which have been referred to this Commission?—I am a Deputy Surgeon-General in the Bombay Army, and I have served there for 30 years from 1855 to 1885. I have been in charge of two gaois in Bombay for 14 years, and also I have had charge of civil surgeoncies in different places in Gujerat and Bombay and Upper Sind. I have been once to Hong Kong; that was only on sick leave.

1885. So that you are in a position to have formed an opinion—a professional opinion—as to the effect of the consumption of opium upon those who resort to the practice?—Yes.

1886. Well, will you sum up in a general statement the conclusions at which you have arrived?—The first point I want to bring before the Commission is with regard to opium being a harmless thing, as it has been represented by Sir George Birdwood and others. Sir George argued that men became ill from debauchery and from rheumatism and various illnesses, and that they took opium as a palliative; that that was the reason why the opium dens were filled; and that opium in that sense became a blessing rather than a curse. He argued that the burning of the opium destroyed its powers of intoxication to a great extent. To show that that is a mistake, I just mention what I know to be the case in some of the low huts where opium is smoked by the father of a family, when he goes away for a week the children become restless and fretful, and do not know what is the matter; this shows that the mere fumes in the place have a direct effect upon the children while they are there.

1887. (*Mr. Pease.*) Is this effect not produced as long as the smoking is continued?—No as long as the children get their stimulant, they are soothed and quiet, but directly the father goes away for a time, they miss it, and they do not know what it is they miss.

1888. Then the children have been the consumers, as well as the parents?—Through the smoke—of course. Sir George Birdwood says that opium-smoking is as innocuous as smoking hay, and he re-affirmed that here, that it was absolutely innocent. Well, if that was the case, it would be absolutely impossible to do any harm by smoking to excess. There can be no doubt that there is ample evidence that you can smoke to excess, so of course that statement cannot hold water. Then with regard to the opium dens, in Bombay, I only can meet a theory with facts. It is said that simply the low people who commit crimes and so on are found there. Well, that is, to a certain extent, true, and it is also true that people—and a great many people—found in the dens have taken to it for rheumatism and pain, and thus acquired the habit. But I want just to show—I will only mention the cases in a few words, on account of the lateness of the time—I want to show from positive evidence, that a great many of the people who are found in the dens do not come from sickness or anything of the kind. The evidence that I want to lay before you is derived from the personal knowledge of a lady, Miss Sunderbai Powar, who has been lately in England lecturing about opium. That lady is a Christian, she was of high caste Brahmin parentage, and she was one

1881. I think you are not a medical man, are you?—I am not, sir.

1882. Then you do not agree in the evidence we have had from medical men who have appeared before us, some of them, that the opium habit had very little effect on the mortality rate in China?—Well, take the evidence of Hong Kong where the deaths are registered. There is not the certificate of a qualified English doctor. I assume that the word of the native practitioner is taken upon a question of that sort. And then in a colony like Hong Kong, where you have a floating population, those who become incapacitated from opium naturally go back to their homes, and the men in the full vigour of their power are kept there.

1883. Then your impression is that the opium habit in the districts that you have known had an unfavourable effect upon the general health of the population?—Certainly; and I have seen opium smokers die almost at my feet.

of the first seven pupils in the normal school which my wife started in Bombay.

1889. (*Sir J. Lyall.*) I suppose you know, sir, that the dens are abolished, I mean if the argument is in favour of the abolition of the dens, it is hardly worth while going on with it?—I am not referring now to the abolition of the dens, but to the kind of people who are found there. I have known Miss Sunderbai Powar for 14 or 15 years, at any rate, so I can absolutely rely upon her statements. She mentions a case here of one of her own relatives, who was very rich, and some years ago he took to smoking opium. The consequence was, that he sold and lost everything, and has sunk so low that he beats his wife nearly every day; he is a mere skeleton in appearance.

1890. I think we all admit that a large proportion of people who take opium take it to excess, and that a good many take it merely for intoxication. I do not suppose you would deny that some of these have taken to opium because they have been previously diseased?—I said that some do because they are previously diseased, but I want to show, by actual cases, that there are a great many miserable emaciated creatures who were not diseased at all, but were strong, well, and healthy, when they commenced the habit.

1891. I think that is admitted?—Of course the time is very short. If you will allow me to put in these papers, and read them for yourselves, I shall be very glad to do so.

1892. (*Chairman.*) Just give us the points that you want to insist upon?—I want to show case after case of actual people who we know were brought down to this degraded condition, simply through taking opium. Here is one case from the "Bombay Guardian" of August 5th, 1893, of a lad, stated to be "the only son of a horse merchant. The father was sufficiently wealthy to spend ten thousand rupees on the wedding of his son, when, according to custom, the latter was married while a little boy. Unfortunately for the child his father had a quarrel with his partner in business. The partner, to revenge himself, bribed the servant, who had control of the boy, to give his young charge, regularly, sweetmeats mixed with opium. There was no difficulty in carrying out the wicked design. Very soon the opium crave began. When the parents discovered it, they were alarmed, and tried to rescue their boy from the imperious habit, but to no purpose. At last, he ran away from home, never communicating with his parents and young wife, and when the photograph that we reproduce was taken, he was a confirmed frequenter of opium dens in Bombay, wrecked body and soul by opium, albeit for that reason a valuable contributor to the Government revenue."

1893. We may take it from you that cases that answered to that description are numerous?—These are positive facts, not mere theories.

1894-5. That there are many people whom you could individually name, and that other witnesses from their experience could individually name, who have been brought to a state of degradation by the excessive use of opium. That is your testimony, and we accept it?—Yes; many who became what we find them, from opium smoking and not from sickness.

Deputy-Surg-
General W. P.
Partridge.

1896. It is established, I think, to the satisfaction of every member of the Commission that such cases are unhappily numerous?—Yes; well my opinion about the opium eating, and smoking, and drinking is that it is a vice, that it injures the health, and that it degrades, as all vices do, the moral nature of those who indulge in it, only to a greater degree than other vices; and that it is far more detrimental than alcohol, bad as that is; that the opium crave soon overcomes habitual opium takers, whether they consume much or little, and that it cannot be overcome except by the grace of God. That opium takers are conscious of their degradation and bewail it, but cannot, unaided, leave off the habit. We know this from the fact that we have had petitions for the abolition of the opium trade sent in by the frequenters of the opium dens themselves. That the manufacture and sale of opium, except as a medicine, is a great sin. I just want to emphasise that the Government of India sends out annually to China, say, 80,000 chests, or 5,000 tons of opium or 78,400,000,000 grains; 4 grains would kill a man if he is not accustomed to take it, and, therefore, we send, simply for the sake of revenue, to China every year as much as would kill 19,600,000,000 of people.

1897. (Sir W. Roberts.) Are you aware that a similar calculation, or an analogous calculation, with regard to the salt that we take would bring out the same astounding sort of conclusion?—No, I not know anything about salt.

1898. In this way, that about 1 lb. of salt is a fatal dose?—Yes.

1899. But people in the course of a year take about 12 lbs. of salt; the salt that you take would kill you 12 times over in a year. Such a calculation as that is not of much value?—Supposing that is so—well it is a fact that so much poison is sent out.

1900. It applies to salt in the same way?—Very well. Here is some testimony up to the date of 31st July 1893, about the closing of those opium dens, which Sir James Lyall was speaking about. They were closed for smoking only, of course, and we know that a private and confidential circular was sent by the Commissioner North-West Provinces to all Commissioners and collectors North-West Provinces and Oudh, to tell them that there was nothing illegal in opening an opium den next door and providing pipes, so that in other words, though they must not smoke opium in the dens, they might smoke it next door. When that was known in Bombay the people—

1901. (Chairman.) You say that confidential circulars have been issued by the Government of the North-West Provinces in that sense?—I will show you the date—the circular was issued on the 26th July 1892; “by the Government order of the 23th September 1891, the Viceroy ordered that in future in all provinces of British India clauses should be inserted in opium licences prohibiting the smoking or consumption of opium, and its preparation in any other form on the premises”; that is Resolution, No. 4,033, the object being *apparently* to reduce the evil to a minimum by giving no facilities for its consumption on licensed premises. Then Mr. Stoker, of the Civil Service, Commissioner of Excise for the North-West Provinces and Oudh, issued the following circular:—

“To all Commissioners and Collectors.

“N.W. Prov. and Oudh,
26th July 1892.

“Sir, “You are already aware that henceforth the Chandu and Madak smoking is absolutely prohibited on the premises licensed for the sale of the drug. It is impossible to doubt that this prohibition will be followed by the opening in many places of unlicensed places of resort where smokers can obtain the facilities which they require, and that such places will have to be kept under observation both for general reasons and also with a view to prevent the use of illicit opium. As the law now stands the authorities have no power to suppress consumption on premises where opium or its preparations are not sold. There is nothing in the law to prevent anyone opening a saloon for the accommodation of opium smokers, who bring their own chandu. He can supply lamps and service and charge a fee for their use, and the law cannot touch him! Unless he is detected selling opium or its preparations, or found in possession of more than legal quantity. On this point the opinion of the Board of Revenue is, that it is not altogether advisable that such places should be suppressed. Collectors should watch such establishments carefully so as to prevent the sale of illicit opium. The

known conditions of chandu smoking render the maintenance of some common place for the consumption of the drug an almost absolute necessity. *No effort should be made to suppress such places as it is better that they should be known and thus liable to supervision.*”

That was a private and confidential circular issued by Mr. Stoker. Mr. Caine, M.P., brought it out, and it has been ordered to be withdrawn, but the mischief of course is done; they can sell opium in the licensed shops, and open any number of dens elsewhere.

1902. (Sir J. Lyall.) Is it not a fact that they could not be suppressed. Is not that statement of the law correct. “There is nothing in the law to prevent anyone opening a saloon for the accommodation of opium smokers who bring their own chandu”?—The opium dens are practically not closed—

1903. What Government formerly did was to give the licence to a man to keep an opium shop open for opium smoking?—Yes, selling and smoking.

1904. And of course he was a vendor; he had a large amount of opium, or he had also a licence to manufacture the crude opium into smoking opium?—Yes.

1905. Well, that was done away with. I myself proposed it first, as long ago as 1883, as Financial Commissioner to the Punjab. It began to be done away within the Punjab the following year, and a long time afterwards, in 1891, it was generally prohibited. But that circular says that there is no law to prevent men clubbing together, having got the amount of opium they can get from the licensed vendor, resorting to some other room, and either themselves boiling their opium or using a common servant to boil the opium, and then smoking it there. Unless you can prove that there is some man who keeps a shop and sells opium himself to other people, the law does not enable you to prohibit, but that is all that the circular says after all?—Mr. Stoker circulates the information for the benefit of those people who might think that they must stop.

1906. Not for the benefit of those people, but a confidential circular addressed to the officials to tell them how far they can go?—Yes, these men know he may do that.

1907. A man does not know it. The question is whether the police shall interfere with these people or not, or whether the Revenue officials should do so. He says you must look out and see whether this man sells opium in an illicit way?—Yes.

1908. But there is no law to prevent it?—There is no law to prevent them opening smoking dens. Many of these poor men have no pipes, and smoking would be prohibited if there were no dens.

1909. There is no law prohibiting the use of a pipe unfortunately. That circular is only a statement of fact?—It is only a statement; it is only a circular.

1910. You admit there was nothing wrong in the circular?—No. It was a decided hint to them to explain to these people that they might sell it for the purpose of smoking.

1911. It was not addressed to them, it was addressed merely to the officials?—To the officials.

1912. I believe the reason it was confidential—I do not know anything about it—was that it should not be said that they suggested it. If printed as a public circular, it would have been in the possession of all opium vendors as all circulars relating to their trade are, and then it would have proved a direct incitement no doubt, but being confidential that could not be said.

1913. (Chairman.) It was an instruction to the officials confidentially to tell them how far they might go in interfering themselves.

1914. (Mr. Mowbray.) It has as a matter of fact been withdrawn as “being capable of misinterpretation.” I think that was the language of the Government of India?—Yes, it was withdrawn when it became public.

1915. (Chairman.) I think that is all we need have on that point?—That was merely introductory to the evidence of two men. I will just give what they said on this very point. One of the dens in Bombay was visited, and they knew it was going to be closed, in fact, while it was being visited, this den was closed. When the men who were smoking were asked whether they were glad or sorry that the opium den was closed, there were only two who were sorry, and they said that they were so because they thought they would suffer so much pain on giving it up. Other groups were questioned, and they all agreed that it was a good thing to

Deputy-Surg.
General W. P.
Partridge.

16 Sept. 1893.

Deputy-Surg-
General W. P.
Partridge.

16 Sept. 1893.

close the shops for smoking. One said, "Curse it, curse the opium, it has shattered my body. Once I was strong enough to wrestle with 10 men, but I look at me now; a child can push me down." Another said, "Look at me, I am ruined and poor, and nearly dead, but what is done is done and cannot be helped. For 30 years I have been a slave to this habit, and it has eaten my strength away, dried up my blood, and deadened my senses. For every 4 pice (1d.) I spend for food, I spend 4 annas (4d) for opium. We are ruined, and soon may die and now the dens are closed there is hope for the children." That is just simply the testimony of two of the men, on the 31st of July last.

1916. (Sir J. Lyall.) What is this intended to prove; that the dens should be closed?—To show that the men themselves hated them.

1917. But the dens are closed?—They are closed for smoking only. It is said that they do not demoralise people; I have got in my mind, now, a lady, highly refined, educated, and polished, in England, a personal friend of mind—whom I know perfectly well. She took to opium in the form of chlorodyne, and she became filthy dirty, shut herself up in her room, would not wash herself, or do anything; she was deceitful and untruthful, and she became more like a beast than a woman. That was not from any previous disease at all, but simply from the habit.

1918. (Chairman.) That is a case establishing your general proposition, which we fully accept, that the cases are numerous in which people are grievously deteriorated by the excessive use of opium?—Like Dr. Heron and Neil, and some other murderers, who were all opium eaters. Well, I need not show that. Then a good deal has been said about opium eaters often being healthy men. Supposing that were so, I do not see that that alters the case at all. A vice is just as much a vice in a fat man as in a thin man. I do not see that that makes any difference at all, if the thing is a vice. It has been conclusively proved to my mind that opium renders a man insensible to ties of affection; renders him intensely selfish, so that he does not care about his wife or his children, or his family, or anything else; so it must be a vice and nothing but a vice. Sir William Moore praised opium because it enabled a Rajput gentleman to go a long journey, and the camelmen to endure privation, and to do with less food, and so on. All these effects we perfectly admit—I do at least. I know that in Upper Sind they have got little hardy mares that will travel 60 miles on a stretch straight on, and they have got a lump of opium round their bits; that is the way they enable these little mares to travel so far, and in the recent long-distance ride in Germany they injected morphia under the horses' skin to enable them to go. We admit all these facts. If I was in the mutiny and I was obliged to run whether I could help it or not, I would take any stimulant that I had, but these are merely exceptional cases, and it is not fair to take them as instances. I have ridden 40 miles in one night on a camel without any "stirrup cup" at all; I had nothing but a lot of dirty water out a camel's mussyack to take on a hot Sind night, therefore I think Sir William Moore's Rajput gentleman could have done just the same without his opium drink. But it seems to me that the fallacy of all this that has been said by pro-opiumists about men being bright, clever, intelligent, and so on, all lies in this one point, that they are looked upon only while they are under the influence of opium. Everybody is bright; there is no doubt that up to a certain extent he may be while he is being stimulated. I think the strongest point that pro-opiumists have made for us was what Sir John Strachey said the other day, that the Sikhs could not go to war without a supply of opium. A man is all very well, while he is in camp; I have had Sikhs in some of the regiments I have been with; they are all right, but if you go on service and they cannot get their opium, they are done for.

1919. (Sir W. Roberts.) That is the same with daily meals?—Precisely, but you provide for daily meals; you do not provide opium, at least the Government does not. That is all I wish to say on the first subject. A good many points that tell in our favour have been admitted by the pro-opiumists. Then I wanted to say a word on another subject if you will allow me. Dr. Mouat said that opium does not swell the number of patients in hospitals. Of course, I have had charge of lots of hospitals in the last 30 years, and I have had charge of jails also. Dr. Mouat says that in the

statistics that he took in 1841-47 in Calcutta, out of 56,392 patients admitted into hospital, "not a single case of disease or death attributable to opium was found." Directly I heard that, I said "Why, there is not the slightest difficulty in explaining this." We have to send in Government Returns of the sick people under certain printed heads. Amongst these there are "diseases of the brain," "diseases of the spinal cord," "diseases of the respiratory organs," &c. There is a column for "alcoholism," there is no column for opium at all, and therefore a man who comes in with disease of any kind, dysentery or diarrhoea, caused by opium, is not put down as an opium patient, but is put down as a man with dysentery or diarrhoea. Dr. Mouat ought to have said "attributed" and not "attributable." Then Dr. Sir George Birdwood, I think, and Dr. Mouat and several others, if I remember right, said that there were no deaths from opium, that opium did not cause death. Well, if there were great neglect of sanitary arrangements in a street, and a man died of typhoid fever, if that man was put down in the Return as having died of typhoid fever, would it be true to say that he did not die of neglect of sanitary arrangements; and opium causes conditions of body in which certain diseases set in, and therefore it is not right to say that opium is not the cause of the death.

1920. You would call it a pre-disposing cause, would you not?—Just as the neglect of sanitary arrangements is a pre-disposing cause of typhoid fever—exactly the same thing, and that seems to me a very simple thing. Then Dr. Mouat said that opium does not fill our jails with criminals. Well, I have had charge of the "House of Correction" and the common jail in Bombay for 14 years, and I have always had people suffering from opium in the jails—a perfect nuisance they are; but, of course, when an opium eater steals money or clothes or any thing else to satisfy his craving it stands to sense that he is not put down as "opium eater;" he is put down as "thief," and that is simply and solely the reason you have no returns in jails of opium criminals. I have always had the greatest trouble with those opium prisoners. They have to be examined most carefully; they conceal opium in their hair, in their mouths, under their nails, under their armpits, between their legs, and in all kinds of possible, and almost impossible, places. You have to search them all over. There was one man who pretended to have a great gumboil, and would not open his mouth. I insisted on opening it, and a great piece of opium came out. And then, besides that, there is no difficulty in an opium eater having a friend outside getting opium in the jail. I do not say anything about bribing the warders—that is done sometimes—but at a pre-concerted signal their friends throw it over the wall. It is in such a little quantity that they can easily get it. I have always stopped liquor entirely, even in cases of *delirium tremens*, and I have never been afraid of any bad effects from doing so; but I have been absolutely afraid to stop opium. I was afraid of the men killing themselves. If you stop the opium they howl all night. One witness said that he had never heard a man howling, but it is quite common. Of course, I am speaking of habitual opium eaters. A man will keep all the other prisoners awake at night with howling if you stop his opium. I have been obliged to give them a little opium from time to time. I always gave so little that they were not, of course, in the least bit satisfied with it, but I dared not stop it altogether. You cannot get any work out of these men; they are not fit for anything. Dr. C. Valentine, President of the Medical Training Institute, Agra, is not able to come here now, but you may see him in Agra, in India. He gives a testimony which will be important. He says: "25 years ago I made this matter a special study in the central prison of Jeypur. There were from 800 to 900 prisoners, more than three-quarters of whom used opium, and quite half of them to excess. I had ample opportunities of studying its effects upon their moral and physical nature." This is not according to my experience, because we got the wretched miserable Hindoos in Bombay, but he is among the Rajputs. "Quite one-half of the violent forms of crime was committed under the effects of opium. With a plug of opium in his mouth a Rajput was ready to burn a village, loot a mail cart, cut a person down with a sword, cut off a woman's nose, or throw a child into a well. In the first or second stage of the action of the drug the opium eater was fit for any form of mischief. When the third stage has set in he was useless—a maudlin idiot. When the effect had passed off the opium eater was miserable and unable for

"mental or physical exertion. I have never known an instance of a confirmed opium eater voluntarily laying aside the habit." This can be confirmed by Dr. Valentine on the spot. So much with reference to prisons.

1921. (*Chairman.*) We must confine ourselves as far as possible at this late stage of our English inquiry to evidence at first hand.—The next point is, "Do you consider that opium is a prophylactic against fever." There is one authority, just to mention it in two words, Dr. Morrison, the medical missionary at Rampore Bauleah, Bengal. He has treated from 6,000 to 10,000 patients annually for 15 years, and though 80 per cent. suffered from malaria he never heard one native hint that opium prevented fever. That is my experience too. For 30 years I have been in India. I have been in malarious places. I have been in Gujerat, North Sind, and so on, but I have never once been asked by any native for opium as an antidote for fever; they never hinted at such a thing, and I do not believe that any of the natives use it as a prophylactic for fever. I should like to say one word about the children.

1922 We shall be glad to hear that?—In the petition sent to the House of Commons by 48 native medical men in Bombay—this is a copy of it; I bring it because there is a picture of two of the leading medical men in Bombay upon it, Dr. Atmaram Pandurang and Dr. R. N. Khory. It is stated in the 5th paragraph "That your petitioners also desire to draw your attention to the great harm which results from the practice of giving opium in the form of a small pill to children. This is done by parents to save themselves trouble, but the evils that spring from the practice are of a serious nature. Numerous cases of opium poisoning arise from it, many of which end fatally." And yet we find that Government is selling children's pills. Here is a translation of a Government notice posted up in the Null Bazar, Bombay, dated July 15th 1891; signed by "J. M. Campbell, Land Revenue, Customs, and Akbari Collector." "At present the right of selling children's pills has been given to the Bombay opium contractors, and such pills can be bought of all Government opium shops in Bombay." Government is selling pills for children, and children are remarkably susceptible to opium. My own grandchild, the daughter of the Chief Presidency Magistrate in Bombay, when six weeks old, was nearly poisoned by a nurse who put opium under her finger-nail and gave it to the child to suck to keep her quiet. She was insensible for 15 hours.

1923. (*Sir J. Lyall.*) I beg your pardon, did you say the Government are selling pills?—The Government are selling pills for children.

1924. You mean the licensed vendors, the retail vendors; that is not Government?—Yes, but Government has given the permission. "At present the right of selling children's pills has been given to the Bombay opium contractors." That is by the British Government. It is signed by the Collector of Customs and Akbari, Mr. Campbell. They have given them a special licence to sell children's pills in the bazar.

1925. (*Chairman.*) Do you admit that in certain cases these pills might be desirable as a treatment?—You might just as well turn a box of opium pills loose in a nursery and let the ignorant English nurse use them as she likes.

1926. In competent professional hands?—But they are not. Here is a picture of an opium baby I did myself in Bombay with his mother. They feed these children on opium until they are very thin, absolutely skeletons. I remember a child in the common jail in Bombay more like a dried monkey than a human being, a thousand times worse than that child. That one has got a great big belly, thin arms, and an old man's face.

1927. You are a linner of no mean skill, Dr. Partridge?—Well, I draw a good deal. Cases I have seen are a thousand times worse than that child.

1928. (*Sir W. Roberts.*) I was going to ask you whether these pills were sold by druggists?—No, they are only sold at opium shops by permission of Government.

1929. (*Sir J. Lyall.*) It would not require permission of Government?—Yes, nobody is allowed to sell opium pills.

1930. I mean to say, a man is allowed to sell opium only up to a certain limit, but it would require no separate permission to sell a pill?—Well, but these are called children's pills.

1931. That is a name that has been given them by the seller, not by Government?—But this is a Government notice, written and signed by Mr. Campbell on the 15th July. These are the words of the Government stuck up in the Null Bazar, Bombay.

1932. What is the wording?—"At present the right of selling children's pills has been given to the Bombay opium contractors, and such pills can be bought of all Government opium shops in Bombay." That is the official document.

1933. What date is that?—15th July 1891, signed by J. M. Campbell, Land Revenue, Customs and Akbari Collector. It is one of the most staggering things I ever read when I know that children are so easily killed by opium.

1934. You are a man of a certain amount of Indian experience; do you not think that the fact was that the chemists were selling opium under the name of children's pills, and that it was found necessary to restrict the sale therefore to licensed opium vendors?—It would not restrict the sale; I should call it increasing it.

1935. I suppose the chemists were stopped?—I do not know anything about that.

1936. The native chemists?—The hakims give pills out of their own dispensaries. Somebody said the old women gave opium; they do not do that.

1937. (*Sir W. Roberts.*) Is there no explanation of that circular?—I have no explanation.

1938. (*Sir J. Lyall.*) Do you not think the explanation I gave is probably the right one?—I do not know at all, except the fact of the circular. Of course you can speculate to any extent about it.

1939. (*Chairman.*) I might put this question to you. Are you aware that after an inquiry in the House of Commons reference was made to India, and it was ascertained that there were formerly 300 unlicensed shops where children's pills could be bought, but since the matter has been put under regulations there are now only 12 such shops?—I did not know that; but it does not make the slightest difference if it is so, except in the quantity that is sold. You would have to go into one kind of shop instead of another. But if you ask any English mother if she would like an ordinary—sensible, if you like,—nurse to have a box of pills to give to the children just as she liked, why she would be half dead with horror.

1940. (*Sir J. Lyall.*) Is there anything in the English system which would prevent a mother giving opium pills to her child?—Well, they give it in some of these syrups and things.

1941. A mother may go to a chemist's shop and buy all the opium she likes and give it to her child?—They have no right to do it, whether they could or not.

1942. My opinion is that there is practically no restriction?—Oh, there is some restriction.

1943. There is no real restriction, I think.

1944. (*Chairman.*) There is no practical restriction in this country?—It is not prohibited; you cannot stop it, but you can hinder it; a chemist could be punished for doing it.

1945. (*Sir J. Lyall.*) He could for poisons, but I doubt if he could for opium?—He is bound to put a label "poison" on opium.

1946. (*Chairman.*) Persons can purchase a poisonous substance in England and use it for an injurious purpose?—Yes. There is another point; it is an important one, because it comes from the Ophthalmic Surgeon in Bombay, Dr. Machonachie, a man whom I know very well. "A boy aged 18 months was taken to him from Thana in February 1893. The child had been suffering from opium diarrhoea, and had been to Dr. Lazarus of the Scotch Free Dispensary, Thana, who told the parents that the practice of giving it opium must be stopped. This the parents promised to do. Soon, however, its eyes became ulcerated and it was taken to Bombay." "Dr. Machonachie pronounced the case hopeless. 'Its eyes,' he said, 'have been ruined by opium.' It is very common for natives to dose their children with opium, and it often causes this condition of the eyes. I have hundreds of native children brought to me whose sight is utterly destroyed by opium. Some are even in a stupor when brought here." They are ill-fed, and opium is given to quiet them. The child was taken back to Thana and shown to Surgeon.

Deputy-Surg.-General W. P. Partridge.

16 Sept. 1893.

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Partridge.
16 Sept. 1893.

Major Kirtirkar at the Civil Hospital, who said:—"I have many cases of children dosed with opium. I register them in my books as chronic cases of opium. They usually begin with diarrhoea and often lose their eyesight by suppurations of the cornea. This is very common among natives." In further confirmation of this: there is a statement in "Bombay Guardian," August 5, 1893. From Captain Yeshwanti Bai of Salvation Army: "An infant one month old, was brought to me from another village for medical treatment. The little mite's eyes had been utterly destroyed through the evident administration of opium, which the mother confessed to have given in large quantities, and its face was already getting that old maimish expression seen in opium-drugged babies. I am always having babies brought to me affected in some part or other through opium."

1947. (Mr. Wilson.) You referred to those unlicensed opium dens, or saloons as we call them, and the Despatch of Lord Kimberley on the subject, suggesting that the law wanted strengthening?—No; I do not myself know anything about it.

1948. The Despatch of the 16th March of this year; you do not know anything about it?—No; I do not know anything about it.

1949. It is a Parliamentary paper; I wanted just to ask you: You have referred to the opium criminals in jails, do you know anything at all about the proportions? You can only express a very common opinion?—No. We generally had, I suppose, eight or nine opium eaters—no smokers. I have never had an opium smoker in jail in my life; they do not smoke opium except in the dens in Bombay. Generally there were eight or nine I suppose, some of them bad enough to be in hospitals, some of them sent to their work.

1950. Do I understand that you consider that a good many of them had got into jail through crimes committed in order to obtain opium?—The usual crimes with opium criminals are gambling and stealing. These petty crimes are what they come into jail for. An opium eater must have his opium.

1951. My question was, whether you have any idea as to the proportion of those cases to the total number?—No, I cannot tell you for certain at all. We always had some seven or eight perhaps.

1952. (Sir J. Lyall.) You criticise Dr. Mouat as to no deaths being attributable to opium according to Bengal jail returns?—Yes.

1953. Could not and would not Dr. Mouat and the other doctors below him have had a column added of "Opium habit" as well as "Alcoholism" if they had thought the facts called for it; would it not have been their duty if they had thought that deaths were attributable to opium, to ask that a column should be

The witness withdrew.

Mr. P. Turner
and
Mr. T. Hutton.

Mr. POLHILL TURNER and Mr. THOMAS HUTTON called in and examined.

1961. (Chairman.) You have both been serving in China as missionaries?—(Mr. Hutton.) Yes.

1962. Are you generally acquainted with the testimony which has been given by the various representatives of the missionary societies whom we have had the advantage of hearing?—Yes.

1963. You will perhaps take it from me that so far as the Commission has had the opportunity of confirming the opinion, we are satisfied that the missionary bodies at any rate by a large majority are impressed by the fact that the opium trade has involved a great moral harm on the Chinese people. You may accept it that we have received this testimony, and so far as the evidence of the missionaries who have appeared before us is concerned it is practically almost unanimous; therefore we do not wish unnecessarily to repeat the same evidence. You have sought to appear before us, as I understand it, because your field of labour has been in the mountainous districts of China?—(Mr. Turner.) Exactly.

1964. In what parts of China have you been serving?—Kan-suh more especially, the most north-westerly province—three provinces, Kan-suh, Si-chuen, and Shen-si.

1965. Has Mr. Hutton been in the same districts? Will you state what they were?—(Mr. Hutton.) On the borders of Mongolia, in the north-west of Kan-suh, and also through the north of the Shen-si Province. I have mapped it out here (showing map).

added?—Yes, I think so. For a long time there was no column for alcoholism; I think that has been added comparatively recently; in fact, for many years I do not remember a column for alcoholism at all; that has been added lately.

1954. I suppose you know Dr. Mouat pretty well; I suppose we may assume that he did not think that deaths were attributable to opium, or he would have had a column added?—On the principle, you see, that they do not look upon opium as the primary cause of it, and as I said, they would not necessarily put typhoid fever as "neglect of sanitary arrangements"; you would have in the return of mortality in England "typhoid fever."

1955. It would be just as much their duty to put in a column for "opium deaths" as to put a column for deaths due to alcoholism?—I should think so; if I were Inspector General of Prisons, I should.

1956. You referred to Dr. Valentine's evidence about the audacity of criminals under the effects of opium; do you not think that he would himself admit that the intention of committing violent crimes of that kind precedes the taking of the drug, and that it is taken by such criminals merely to give them temporary strength and courage?—No; I do not think that at all. I do not think that he means that at all.

1957. You have had much experience in India—medical experience—how would you propose to establish a system in India whereby opium would be available for medical purposes and not for such purposes as doses to keep children quiet. You referred to the common habit?—There would be more difficulty in doing it in India than in England. If we cannot restrain it in England altogether, of course it would be more difficult in India.

1958. There are no chemists you know, except perhaps one or two in the principal towns?—There are plenty of shops where native medical men dispense their own medicine.

1959. But are those people reliable? If you allowed them to deal in opium at all, would they not turn their shops into opium shops?—Very likely; they are all bribable, the lower classes as well as the others. Of course there are many who would not misuse the license, just like chemists in England.

1960. You would suggest no method?—There is but one method, Government could absolutely stop the sale of opium. The less opium there was in the market the less they would be able to get. Now it is as common a thing as dirt; a child could go and buy opium up to a certain amount. They never think of prohibiting it. You cannot stop children going to public-houses buying beer although it is illegal, but you can check it.

1966. We have had your missionary station map?—The red line is the route that I took through China.

1967. Would you say that there is a difference in type in the people among whom you have laboured as compared with the Chinese of the south?—(Mr. Turner.) In the province of Kan-suh they are a little more stolid, more like our northerners in England, but the main characteristics are the same.

1968. Will you tell us your general view as to the effect of the opium habit among the people among whom you have laboured?—My belief, sir, is just the same as that of those missionaries who have given testimony as to the physical and moral effect on the natives. The particular town in which I was labouring was a mountainous town, about 7000 feet above the level of the sea.

1969. The name of it was?—Sining, in the Province of Kan-suh. Wherever I have travelled opium is consumed just as largely as in any other province that I have visited. In that town they told me on more than one occasion that 50 years ago the drug was unknown, but now it is just as largely smoked as anywhere in China. The people themselves say by eight-tenths of the population. That is a little exaggerated of course, but I think one-third is not too large; but I have always wherever I have been had the introduction of opium attributed to us. *Yang yen*, foreign smoke, is the name they give to opium; *Yang ren* is the name we are called, —foreigners, and of course they couple the two together.

1970. The opium consumed in the vicinity of Sining bore the name of a foreign smoke?—Foreign smoke. Yes.

1971. But as a matter of fact was the opium smoked in the vicinity of Sining a local production?—It is now, probably at the beginning it was not, but they accused us of bringing it to them.

1972. But now at the present moment?—(Mr. Hutton.) Native opium is called a foreign smoke, although it is produced in Chinese territory; that is the stigma that is put upon us.

1973. We understand it is called foreign smoke, but, as a matter of fact, is the opium which is consumed in the vicinity of Sining a locally produced article?—(Mr. Turner.) It is now produced locally.

1974. Is there any other special point that you would like to bring before us?—(Mr. Turner.) No, your Lordship, I have not.

1975. And now, Mr. Hutton, you have put before me a map with a track upon it representing a journey that you have made?—(Mr. Hutton.) Yes, your Lordship.

1976. Describe your journey would you?—With regard to a letter which was read from a gentleman of the name of Mr. Duff this morning, if it is the same Mr. Duff as I think it may be, I think he was a merchant in the Port of Chin-Kiang. During the last three years I have been in China, I was also stationed in that port. There was one remark in the letter referring to the hill tribes; he says, "they are not so addicted to opium—smoking as the people who live in the plains." Well, on this journey that I took—

1977. Beginning at Shanghai was it?—From Shanghai to Hankow, up the Han River, and through Kan-suh to Ning-hsia on the Mongolian frontier; then along the Great Wall, through the province of Shan-si and Chih-li to Tien-tsin. With the exception of a few missionaries that I met with at our different stations, and a few Roman Catholic priests, I did not meet with any European officials, Consuls, or merchants, until I reached Tien-tsin. I was away nearly two years on that journey. I wore the Chinese dress, to a great extent partook of Chinese food, and, except when I was travelling by boats, I stayed in Chinese inns; and throughout the hilly districts I should think that eight out of ten people who used to stay in the inns at night used to smoke opium.

1978. (Sir W. Roberts.) That would be only adult males you are speaking of?—Adult males. That is especially more in those parts which were higher and healthier than in the low and flat parts of the centre and south of China. I should think there were more opium smokers in the Province of Kan-suh than down south. The Province of Kan-suh is very much given up to it, and the statements of those gentlemen who, like Dr. Lockhart, have given evidence after being at home for 10 or 20 years confirm my conviction that of late years opium-smoking has very much increased. I asked a native at Ning-hsia on the Mongolian border, a man that I employed as a teacher, how many smoked opium there, and he said that out of every 100 he thought 80 smoked opium.

1979. That is again speaking of the adults; the adult males?—Yes; but in some of the towns 20 or 30 per cent. of the women also smoke opium.

1980. (Chairman.) You have shown us that as far as your powers of observation have enabled you to form a judgment, and you have had unusual opportunities of travelling through a rarely visited part of China, the opium habit appears to be on the increase. Now what would you say as to its moral and physical effects?—I used to employ three men on a cart journey. Two of them did not appear to take opium, but the third man, an opium smoker, at nearly every place we got to had his cart detained on account of debts that he had contracted on a previous journey, and I finally had to abandon that man altogether, and sacrifice what I had advanced for the use of his cart, and I had to hire another man. Then we employed a man for a cook; he was an opium smoker. If we had known that, we should not have engaged him, for opium smokers are not to be trusted in buying things for us on the streets. We found that we had to pay for the provisions which he purchased nearly half as much again as we had to pay when we employed another man who did not smoke opium. In the practical experience that I have had of these men I should never, if possible, employ in any position of trust a man who smoked opium in any degree.

1981. (Sir J. Lyall.) All these remarks apply exactly to drinkers of spirits in England in the same class of life, do they not?—No, I do not think so. As far as I can see, I do not, think that drinking has the same demoralising effect upon men as smoking opium. Of course, the Chinese are in a lower grade to some extent, than that of people here at home. I agree with the evidence that has been given by other missionaries that opium-smoking has a worse effect upon men, morally and physically, than alcoholic drinks.

1982. (Chairman.) In the North of China is the population of a higher physical ability, would you say, than the people living further south?—Yes.

1983. And notwithstanding the fact, as you say, that 80 per cent. are smokers of opium?—I was going to qualify this a little: that is true so far as they are not carried away by the opium habit. By the Chinese it is attributed to another reason. In the northern parts of China much more wheaten bread is eaten, whereas in the central and southern parts to a great extent the natives exist on rice, and of those who live on wheat the Chinese themselves say: "They are Northern men; they have been living on wheat."

1984. And they are stronger men?—They are stronger.

1985. And better able to take a certain quantity of opium with impunity; is that the case?—I have not met with any men that I have considered could take it with impunity.

1986. Any opium?—Yes.

1987. Now, Mr. Turner, you have heard the opinion of your colleague in the missionary field with reference to the moral and physical effects of the consumption of opium; what do you say on this point; do you confirm what he said?—(Mr. Turner.) Thoroughly. All my experience goes to show that a man who smokes opium has a barrier placed in the way of listening to any truth that you may tell him about Christianity, which is not in the way of a man who does not smoke opium. It is a barrier raised by the mere fact of the man becoming an opium smoker which does not exist without his smoking opium. And for the physical matter, I am sure anybody, who has laboured in the interior where we have, could not have any two opinions about it. A man beginning to smoke opium is on the downward road. I do not think the cases where a man goes on smoking a small quantity are many.

1988. You think that once you begin to use it at all you readily pass on to excess?—Yes.

1989. (Sir J. Lyall.) You seem to put some weight on the fact that opium is called "foreign smoke." I should like to know for what reason?—Yes. (Mr. Hutton.) I have been in China altogether about eight years; I had a chapel, kept it open in the afternoons, and had visitors coming in. Our preaching is in the form of question and answer to a large extent, and invariably the first question is, What country do you belong to? and when we said that we came from England, in many cases they replied, "Oh, that is where the opium comes from." I explained to them that it came from India; but that is not sufficient, for they said, "India is under British rule."

1990. And so the name affects the people's ideas and prepossesses them against you?—In the Chinese language there are several terms for opium, but the commonest is "yang," a term of reproach.

1991. I do not know whether it is the case in China, but it is the case in the great part of the East, is it not, that a terrible and disgusting disease is called a foreign disease in the same way?—Yes, the same term is used for that disease.

1992. It is so in China?—Yes; I have seen that placarded about too. It is understood that opium is a foreign thing, and, of course, the terminology is not changed in applying it to the opium which is grown by the natives themselves.

1993. But there is evidence that opium was imported by the Arabs and Portuguese before we ever imported it; and is it not probable the name dates from those times before we had anything to do with it?—I have read a good deal as to the original introduction of opium, but I am not qualified to give any opinion upon it at all; for practical purposes it is fathered upon the foreigners, and we are practically the foreigners in China.

Mr. P. Turner
and
Mr. T. Hutton.
16 Sept. 1893.

Mr. P. Turner
and
Mr. T. Hutton.

16 Sept. 1893.

1994. (Mr. Mowbray.) Are there many other missionaries besides English missionaries in the part you have been? You mention that the first question asked was where you came from?—Yes, there are some American missionaries in the coast regions; but the only missionaries in the more distant stations that I have referred to are our own China Inland Missionaries, and the Roman Catholic priests in Kiang-su.

1995. Do the Chinese make any difference between the English missionaries and the American missionaries?—They are beginning to do so. These things are changing in China; the Chinese are getting much more enlightened on these matters than they were. They used to class all missionaries together; now they make a distinction between Protestants and Roman Catholics, and they have also got the length, to some extent, in the parts where missionaries are more commonly known, of distinguishing between French and English and German, and so forth.

1996. Would you say that the American missionaries succeeded better because they could not have the opium question thrown in their teeth?—That is a question which I could not answer.

1997. And can you say anything with regard to the Belgian priests that you have met with, whether their work was less hampered than your work?—I think the Roman Catholics are all agreed, so far as their profession goes, with all missionaries in China, that opium-smoking is wrong, and that no opium smoker should be admitted to their church. But many of the Chinese condemn all foreigners *en masse*; they want to get rid of them altogether.

1998. Whether they have introduced opium or not?—I do not think they can get the length of distinguishing sufficiently.

1999. (Mr. Wilson.) You have spoken about these servants that you have had, cartmen and others that you had, who were dishonest or unsatisfactory; were they what have been called in this room, confirmed sots, or were they what you would call moderate smokers, that is to say, how far have they gone?—I should say they were not as far gone as some I have seen. I have had men coming to me, and begging to be cured of the opium habit. I used to carry opium medicine and sell it, and the Chinese, who had not much money, would give really a large sum to buy that opium medicine. They felt the habit on them so strongly that they would do anything to get rid of it; so, while we gave other medicines away, we always made it a rule to sell opium medicine to these men, and they were willing to pay a good price in order to get cured.

2000. These servants of yours, would you call them moderate smokers, or would you call them confirmed sots?—Well, I do not approve of the phrase moderate at all, in the sense of moderate smoking of opium, because I think to any extent it is an injury. They were not so confirmed as many in the use of it, and did not take so much, but the Chinese vary greatly in the amount they use. (Mr. Turner.) I should say that a sot was a man that did nothing, who was unable to follow any other occupation than just smoke during the day, but a man who would be able to go with a cart could hardly be called a sot.

2001. (Sir W. Roberts.) I understand, Mr. Hutton, from you, that you passed through populations, or resided amongst populations of whom 80 per cent. of the adult males were opium smokers?—(Mr. Hutton.) This was the opinion given to me by my teacher. I asked his opinion on the number of smokers in Ning-hsia, and he said it was an exception to find a man who did not smoke.

2002. Did those populations appear to you weakly and degenerate?—Yes, the people in that city did.

2003. The entire population seemed to you to be degenerate?—Yes, and they complained to us—it is not exactly bearing upon this question; but they said that within 10 years rice has increased in price from 20 to 30 per cent., because the rice growers had taken to grow opium, and the whole outside of the city in every district was just covered with the poppy.

2004. You are quite clear that they were an unhealthy population?—Yes.

2005. (Sir J. Lyall.) Does not the same land grow rice that grows poppy?—The land was very rich there, it was irrigated by water from the Yellow River, and the opium from that place was said to be of very fine quality.

2006. I think I have read that they take a crop of rice off the land in the winter, and then a crop of opium in the spring?—I think it may be so.

2007. You say that the whole population of the town looked degenerate, which you attribute to opium, but a recent traveller in Yunnan said that, though the population was extraordinarily addicted to opium, they looked to him very robust and energetic, and they were extremely industrious. Can you explain that your impression is the other way?—My impression is, the opium is doing them a great injury.

2008. (Sir W. Roberts.) But were they affected, I mean speaking broadly of the entire population, did they appear to you affected, or were they successful commercial people?—Well, I have seen in the case of opium smokers, the same conditions as I have seen at home before I went out. Some of the best workmen that I knew at home were slaves to drink, and I knew a man at home that would come to work on a Thursday morning, and could earn as much money in a few days as the man who had been at work the whole of the week. I think that there may be some exceptions amongst the Chinese opium smokers in the same way; but my own conclusion would be that if that man had not taken the drink for three days in the week, he would have been so much better than the other men instead of reaching their level. I have had coolies in China that did not smoke opium, and I have just been amazed at what they could carry, and the hardships that they could undergo. I knew a non-smoker who started with me one morning about 7 o'clock, travelled all day on foot through the snow, carried a coolie load for me amounting to about 40 lbs., and all day long he kept in front of me. I was walking, and had nothing whatever to carry. We got to our destination about 8 o'clock in the evening, and during the time he travelled about 30 miles, and that man was quite fresh in the evening after travelling all day. There is no doubt about the Chinese being a wonderful race, of great powers and physical endurance; but they would be better than they are if it were not for the opium.

2009. (Chairman.) Have you anything more that you would like to say to us?—(Mr. Turner.) I think the Chinese, wherever I have met them, admit that opium is a curse, an unmitigated curse; and I have heard of some cases where coolie owners would not employ coolies who smoked, but now I believe the habit is getting so universal that it is very difficult to get two or three coolies who do not smoke. Three coolies are usually employed to carry a sedan chair, and it is very seldom that you can get two of them who do not smoke; it is most exceptional. As a rule they smoke very often, but one who does not smoke is almost an exception.

2010. (Sir J. Lyall.) Those chair-bearers perform extraordinary feats in the way of carrying, do they not?—They do, but no doubt the opium has a militating effect against their work. They have to stop at any rate once in the day and keep you waiting while they smoke their opium, and anybody who rides in those chairs with opium smokers know what the disadvantages are; you have men thoroughly unreliable. —(Mr. Hutton.) May I just add one thing. I was going to say I think most of the opium dens are brothels, that the two things go together; but I never met with a confirmed opium smoker that took wine to any extent. The two things cannot go together. Opium smokers have told me that they could not drink wine if they took opium. And opium smokers can take very little food. When we arrived at inns in the evenings after a day's journey, those that do not take opium can sit down and eat three or four big basins of rice and vegetables; but the poor opium smoker is shaking and wanting his pipe; that is all he cares for.

2011. That is sufficient to account almost by itself for the emaciation, I suppose, which is commonly observed?—Yes, that accounts in part for their weakness as compared with the other men.

The witnesses withdrew.

Mr. ALEXANDER MICHIE called in and examined.

Mr.
A. Michie.

16 Sept. 1893.

2012. (*Chairman.*) You have had great experience have you not, Mr. Michie, in China and Japan?—As regards length of time, my Lord, yes.

2013. You have been 40 years years in Hong Kong, Shanghai, Tientsin, and Japan?—Yes 40 years from first to last.

2014. You have been occupied as a merchant, have you not?—Yes.

2015. You have also been in the interior of the Si-chuen Province?—Yes.

2016. As delegate of the Shanghai Chamber of Commerce?—Yes.

2017. You have had considerable acquaintance with Chinese officials have you not?—Yes, a certain amount.

2018. When did you return from China?—This summer; three months ago.

2019. Can you tell us what in your opinion, as far as you have been able to gather, is the general public opinion about the opium habit?—Amongst the Chinese, my Lord.

2020. Amongst the Chinese?—I think it may be said generally that the use of opium is deprecated. It is usually spoken of in an apologetic manner. A man who smokes opium heavily is always ready with some excuse for doing so.

2021. You think it more generally deprecated than the use of alcohol in European countries?—I do not think so.

2022. How far does the opium habit prevail, as far as your experience goes; is it very prevalent?—It is universal as regards area, but its prevalence in a particular community is a matter that is extremely difficult to be definite upon.

2023. Should you say that opium smoking was as common as tobacco smoking is in Europe or less common?—Probably much less common than tobacco.

2024. Is much tobacco smoked in China?—Yes very largely; they are constantly smoking tobacco.

2025. Do the same people smoke tobacco and opium?—Yes, sir.

2026. Have you had many employees who have smoked opium?—I have had large numbers one way and another in my employ, but I do not recall many cases of opium smokers. Probably they were numerous, but it is not easy to tell. It is not always easy to distinguish the opium smoker from a non-opium smoker, unless he has carried it to a great excess.

2027. You never had to dismiss a man, a clerk, or comprador, or any of those men, on account of opium smoking?—No, never, but I must say that I always shared the common prejudice against employing an opium smoker. If you could help it you would prefer a man who was not an opium smoker; for one thing, if you are travelling he is a nuisance because the odour is unpleasant, like the smell of stale tobacco about the clothes. And you can tell at once if there is anyone in a boat's crew that smokes opium, the smell is disagreeable; and so on board steamers the same objection is felt, and in restaurants and so on.

2028. It has been said by a great many witnesses that they do not believe in such a thing as the moderate use of opium, that is, they believe that, if a man once takes to the habit of smoking opium, he must inevitably become an immoderate smoker of opium sooner or later, and probably sooner?—I have heard these statements for many years, but I must say I have never been able to see on what ground they rested. And so far as my own observation goes the fact is not so. I think moderate smoking is very much more common than inveterate smoking. For example, you can hardly go to a Chinese dinner without having the opium pipe there; and when the guests have sat a long time at the table, and eaten a great deal, and drunk a good deal, one will retire to the divan where the opium pipe is and have a whiff of opium, and by-and-bye when he has finished he rejoins the other guests; another one will go, and so on, just as you take a cigarette after dinner, or a glass of wine. That is the common practice. And amongst the men who did so I did not notice that there were many whom you would call confirmed opium smokers. The difficulty, of course, of obtaining information on such subjects in China is very great. I have often myself

tried to get some details, but could rarely get beyond generalities. Even medical missionaries, friends of my own, whom I have asked what is the effect of opium, what is the pathological effect, and so on, could only answer in generalities, and they said that they really had not the opportunity of following the thing out. They see a man to-day, and they do not see him again; perhaps they have him under their observation for a few weeks, and they do not hear of him any more, and so it is in what you may call society, you cannot trace the history of the man, at least I have never been able to get any facts of that sort.

2029. (*Mr. Pease.*) With regard to your saying they leave the table where they are and take a whiff and come back again, on many occasions do they not lie down and take a dose after they have taken a whiff?—Many of them will lie down and smoke opium the whole night.

2030. But those who just leave the table and go and take a whiff and come back, do you find them bright and lively—there is no sleepiness about them?—On the contrary, they are brightened by it.

2031. You did not observe any reaction after the opium?—Well, you do not see them afterwards; you go home to bed, and they go home to bed, and there is an end of it.

2032. (*Sir J. Lyall.*) It has been said by many witnesses that the habit of opium-smoking destroys the honesty and the truthfulness of the people who use it. Have you in your dealings with Chinamen—you have had to deal with a great many Chinese merchants and people I suppose; have you noticed any difference in honesty and truthfulness between the opium smokers and the non-opium smokers?—I cannot say that I have. Dishonesty in opium smokers is common enough amongst the poor people, who become dishonest in order to buy opium; but amongst the merchants and official classes I have not noticed that which has been stated by so many people, in my own experience. Perhaps I have been singularly fortunate, but it so happens that amongst the men whom I have been obliged to trust in an extraordinary degree, more so than I have had to trust anyone, even of my own countrymen, amongst those have been some of the most inveterate smokers, and I have never found that my confidence was abused on that account.

2033. Opium-smoking is not known in Japan; it is prohibited in Japan?—No; opium-smoking is not known in Japan.

2034. How do the Japanese compare with the Chinese in honesty and truthfulness?—Well, it is generally asserted that they are inferior to the Chinese in solidity of character and solidity of physique, and all that.

2035. I suppose you went out to China with some views about opium; did you change or modify your views?—I got some ideas when I got there, I think; in fact I took for granted the general report that was current, chiefly on the authority of missionaries. Perhaps I took exaggerated views of it—I was very young—but I almost expected China to be depopulated in a few years; but after 40 years' experience I do not find that such expectations have been verified at all.

2036. It has been very commonly said that our connexion with the opium trade has had an important effect on the Chinese attitude towards Englishmen?—I do not believe anything of the sort; I have never found a trace of that. I think a Chinaman will always say what he thinks you want him to say, and I think it is exceedingly dangerous to draw any general conclusions from what a Chinaman tells you, especially in answer to leading questions. If it is permitted to refer to an illustration, perhaps wide of the mark, I would say that we have had lately a great deal of a particularly offensive class of literature published by the Chinese, in which every conceivable thing is raked up that would detract from the character of foreigners generally. The most disgusting and extravagant charges have been circulated broadcast by eminent literary men, and I think that, if there had been any strong feeling in regard to opium, there would have been some trace of it in some of these publications; but, so far as I am aware, it is quite absent, and I take that as tolerably conclusive evidence that that strong anti-English feeling is not on account of opium.

2037. Do you think there is any difference observable in their attitude towards, for instance, the

Mr.
A. Michie

16 Sept. 1893.

Germans and the French, and towards us?—No, not certainly not to our detriment. May I refer to the evidence given by one of the last witnesses?

2038. (*Chairman.*) If it is with a view of expressing an opinion of your own, yes?—I heard one of the gentlemen saying that the Chinese were beginning to discriminate between the English and the American missionaries. That recalled to my mind a circumstance that occurred in Peking some years ago when there was an American Bishop or some high official connected with some of the mission churches. He had interviews with certain Chinese officials, and he was employing as his interpreter another American missionary whom I knew very well and who told me the history. He was perhaps the most apostolic missionary that I ever came into contact with. And the Bishop wished him to say to the Chinese that the Americans occupied a different position from the English missionaries, that they had not done this and that, and that particularly they had not gone to war with them and they had not brought opium to them and so on. But his interpreter refused to translate. He said it was mean and it was in its effect untrue.

2039. What are your views as to the relative effects of excess in opium or alcohol?—Well, that is an exceedingly difficult question to answer. I can only say that I have had very intimate friends who were addicted to both, and of the two I think I prefer those that were slaves to opium rather than those who were slaves to drink; I would trust them more. I would trust an opium-smoker sooner than a drunkard. I speak without prejudice, having had among my friends some of my own countrymen who were unfortunately slaves to drink, and I have had Chinese friends who were slaves to opium, and of the two I would prefer—it is a matter of my own judgment—to trust the Chinese.

2040. (*Sir W. Roberts.*) You have mixed a good deal with the better classes of Chinese apparently, the literati and merchants?—Yes to a certain extent, a very moderate extent. No foreigner mixes much with the literary class.

2041. You have seen them in their inner life?—Yes.

2042. And is a large proportion of that class opium smokers?—No doubt.

2043. Would you roughly say one-half of them?—Such an estimate would be a mere guess.

2044. Would it be your impression that fully one-half of them were opium smokers?—Probably; yes, I should say so, but still these estimates must always be taken as being vague.

2045. You would not call that class a degraded class?—Certainly not.

2046. Or a class showing degenerate health?—No, certainly not.

2047. Has this habit of opium smoking, among these better classes been going on for two or three generations, or more successive generations?—I should think so, but that is another point in which it is extremely difficult to be accurate, because foreigners who get out to China for the first time are very apt to be told that everything is new; that everything that is objectionable is recent; that it was not so in the old times. I found that when I was in the Si-chuen Province 25 years ago; they were saying then what they say now, that they had just begun to smoke opium.

2048. And we may take it from you, that from your long experience in China you have known persons who were opium smokers filling respectable positions, having good characters, and being good citizens all that time?—I think so. I have left men with whom I have had to do in Chinese ports so far gone with opium, having taken it for many years, that I considered their lives were not worth a year's purchase, and I have returned after many years and, to my surprise, have found them as vigorous as myself and carrying on their business as keenly as ever.

2049. You look on the opium habit as like the alcoholic habit and that you think if they moderately indulged in opium they would not be injured?—I would not say that they would not be injured, all I say is I know habitual opium smokers who have carried on their business with great vigour and for many years.

The witness withdrew.

The Commission adjourned till the 15th November at Calcutta.

APPENDIX I.

PAPER read by Mr. G. H. M. BATTEN before "The Society of Arts," on the 24th March 1891.

[Mr. Batten was unable to give evidence before the Commission, as he was out of England. His paper was cited in Sir John Strachey's evidence. And the Commission directed that it should be printed as an appendix to Sir John Strachey's evidence.]

THE OPIUM QUESTION.

By G. H. M. BATTEN (formerly of the Bengal Civil Service).

The violent and persistent attack, by an English association, on one of the most valuable of the products of India, with the avowed object of sweeping it from the face of the earth, renders it the duty of everyone who has the welfare of India at heart to examine the grounds on which that attack is made. Having for a long period served the Government of Her Majesty the Queen in India, and having had special opportunities of making myself familiar with the facts relating to Indian opium, I accepted the invitation of this Society to read a paper on the subject, with the desire to help, so far as in me lies, to clear away the widespread ignorance of it which prevails in this country.

Apart from moral considerations, the question, so far as India is concerned, is generally discussed as if it were one affecting only the public resources of the Indian Administration, but it is much more far-reaching. The amount of revenue realised is but a part, and not the greater part, of the actual pecuniary value of the poppy crop and its products, while the well-being and happiness of hundreds of thousands of the people of India would be greatly affected by its extinction. I propose in this paper first to show the real value of that crop, and what it is that India is asked to sacrifice in order to satisfy the theories of a party of English philanthropists, whose excellent intentions in the cause of morality are only equalled by their determination to ignore all but the one side of the question, on which they have fixed their attention, and which serves their purpose.

It must be admitted that one of the surest signs of the progressive prosperity of a country is the increase of its external trade. The conditions which favour the development of foreign commerce are peace and liberty; the establishment of good and equable laws and their just administration; the utmost freedom, consistent with the rights of others, to individuals in utilising the sources of production at their disposal; the extension of facilities of communication within the country and with other countries; lightness of taxation—in a word, all the conditions of good government. Tried by this test, the British Government of India can show a splendid record. So long as the exclusive trading privileges of the East India Company existed they acted as a check on the free development of foreign trade, but on their final abolition in 1833, when the trade of India was thrown open to the mercantile world, it rapidly increased. In 1833-34 the value of the total exports of merchandise from British India was under Rs. 8,000,000 sterling. In fifteen years after that, they had about doubled. The increase then became more rapid, and, when assisted by the extension of railways in India, advanced by leaps and bounds. In the year 1890-91 the value of merchandise exported from India was over Rs. 100,000,000, or more than twelve times the exports of 1833-34.

Long before British rule was established in India, opium was exported thence to China, and the trade in it, in common with all other trade, naturally developed under that rule. In the five years ending with 1833-34, the average quantity of opium exported was about 17,500 chests. The highest point to which it has ever attained was in 1879-80, when 105,508 chests were exported, but the present average is about 90,000 chests. Thus, while the general exports have increased twelve fold, opium exports have increased only about five and a half times in volume in fifty-seven years. The cause of this will be found in the restrictive measures of the Government of India, to which I shall presently refer.

India is essentially an agricultural country, and nearly the whole of its exports consists of products of the soil. One of the most important and valuable of

these products is the opium-yielding poppy. It is impossible to state with accuracy when this plant was first introduced into India. There is little record of its early history, but it is known that the Muhammadans had succeeded, in the 15th century, in introducing the cultivation of the poppy into Cambay and Malwa, and that when the Emperor Akbar, in the latter half of the next century, established the Moghal Empire over Central India, he found Malwa opium a characteristic product of that country.

Dr. George Watt, who has recently compiled a complete monograph on the subject of opium, which has been printed by order of the House of Commons, points out that Abul Fazl (the historian of Akbar's times) specially states that poppy culture was chiefly practised in Fatehpur, Allahabad, and Ghazipur. We learn that the founder of the Moghal civil dynasty and his successors regarded opium as of necessity a State monopoly. They found it, however, at once the most convenient and successful course to farm out the right to manufacture and to sell the drug.

Dr. Bernier, the French traveller, who was in India from 1656 to 1668, speaking of the Rajputs and their martial qualities, wrote: "From an early age they are accustomed to the use of opium, and I have been astonished to see the large quantity they swallow."

Tavernier, who was in India at the same period, incidentally mentions the Dutch trade in opium, which they obtained from Burhanpur in exchange for their pepper.

Captain A. Hamilton, in 1727, wrote: "The Chiefs of Calicut for many years had vended between 500 and 1,000 chests of Bengal opium yearly up in the inland countries, where it is very much used."

The Abbé Raynal, in 1770, described Patna as being the most celebrated place in the world for the cultivation of opium, and stated that, besides what was carried into the inland parts, there were annually 3,000 or 4,000 chests exported, each weighing 300 lbs.

There is ample evidence in the old records of the India Office, which have lately been examined by Sir George Birdwood, to prove that a large trade had been going on in opium between India and surrounding countries long before the East India Company, in 1773, undertook the supervision of the manufacture of opium in Bengal, Behar, and Orissa.

The Company, in fact, inherited from the Moghal Government this important and legitimate source of revenue on an article of luxury which India had shown itself capable of producing in high perfection, and for which there was a large demand both in and out of that country. At first they continued the system of farming out the exclusive right of opium manufacture, but this was found to entail many abuses. Amongst them was the pressure brought by the contractors, in spite of the most stringent regulations to the contrary, on the cultivators, whom they forced to carry on the cultivation, and whom they cheated in various ways. It also led to the adulteration of the drug and its illicit vend. The consequences were so injurious to the revenue, that, in 1797, the contract system was abandoned, and the Government assumed the monopoly of manufacture through its own agencies, a system which has remained in force until the present day. There was, indeed, at that time, no practical alternative. The strongest opponent to the system of Government manufacture would hardly contend that the growth of the poppy and the manufacture of opium should have been left free and unrestricted, as that would infallibly have led to a great increase in the produce of the drug, and probably to its deterioration. On the other hand, if it ever entered into the conception of the court of directors to suppress, in the interests of morality, the cultivation of the poppy in the territories then in their possession, it is doubtful whether they would have had the power in those times to have done so, and it is certain that they could not have controlled the production of the vast poppy-growing tracts outside those territories in Malwa, Cambay, and elsewhere. The only result would have been that the opium consumers in India would have been supplied from sources outside British territory, and that the export trade would have been trans-

ferred to ports other than British. It would certainly have been impossible in those days to establish a Customs line to prevent the entry of opium into the Company's possessions. The Company would have sacrificed its revenue, and no one would have benefited except the people of the territories outside the Company's possessions, at the expense of those within them.

The State monopoly continues to be administered by the Bengal Government, although its operations now extend into the North-west Provinces and Oudh. Under it, no person may cultivate the poppy except with a licence from the Government, and every cultivator is bound to sell the opium produced from his crop to the Government, in whose two factories, at Patna and Ghazipur, it is manufactured into the opium of commerce. A portion of the manufactured opium is retained for consumption in India through vendors licensed by the Excise Department, and the remainder is sold monthly, by auction, in Calcutta to merchants, who export it. The Government prescribes rules for the cultivation of the poppy, the manufacture, possession, transport, import or export, and sale of opium, and any contravention of such rules is subject to stringent penalties, which may extend to imprisonment for one year or fine of 1,000 rupees, or both. Poppy illegally cultivated, and opium the subject of any offence against the law, is liable to confiscation, together with the vessels, packages, and coverings in which it is found, and their other contents, and the animals and conveyances used in carrying it.

Like most crops, the poppy is subject to wide seasonal fluctuations, which formerly greatly affected the market prices of opium, led to speculation and gambling amongst the buyers for export, and caused corresponding uncertainty in the Government revenue. When, owing to the shortness of the supply, the price in Calcutta rose high, the direct effect was to stimulate the production of other opium competing in the foreign market with the Bengal drug, and amongst these the native production of China. Thus—and I would call particular attention to this fact, as having an important bearing on the question before us—the diminution of the supply of Indian opium to China was an incentive to the extension of poppy cultivation in China. To remedy the evils thus arising from the uncertainties of the seasons, the Government decided, twenty-five years ago, to limit the sales of opium in Calcutta to a quantity which would permit the formation of a reserve stock in plenteous years to meet deficiency in years of scarcity.

In the six years previous to 1867, the number of chests sold in a year varied from 21,423 to 64,111, and the price from Rs. 1,449 to Rs. 956 per chest. In 1867 the system of regulating the quantities annually sold, with the view of preventing such extreme oscillations in the price, was commenced.

In 1869, owing to short crops, before there had been time to form a sufficient reserve, there were less than 45,000 chests brought to auction. Sir Richard Temple, who was in charge of the financial department, in his Budget statement, made the following remarks:—

"The Government of Bengal is taking active measures for increasing the supply of opium for the China market to 50,000 chests annually, and for securing a reserve supply which may assure the public as to the quantity to be brought to sale, and may conduce to the checking of undue speculation in prices. There is fear that unless the supply can be improved next season, after these two deficient seasons, the cultivation of the poppy in China itself will be stimulated. For some time past positive accounts have been received of the increase of this culture in China. So it is clear that unless Bengal produces enough opium the Chinese will raise it for themselves. And if the Chinese will have opium, they may as well get it first-rate from us, as second-rate at home, and they may as well consume it taxed as untaxed. Again, if they do not procure it from us, they might procure it from other countries of Asia. The culture of the poppy in Persia is increasing, and some 4,000 chests are exported annually from that country."

Here we have an exposition of the policy of the Government of India. Recognising the fact that the Chinese demand a large supply of opium, and that to whatever extent India was unable to satisfy that demand, it would be met, either by increase of the produce in China itself, or by increased imports from other countries, the Government of India has thought it right, in the interests of the people of India, to shape its measures so as not to lose the natural advantages India possesses in the superior quality of its produce. Any one familiar with the records of the Government

of India relating to this subject, must admit this is a fair representation of its policy and motives, and that nowhere in those records can be found any indication of a desire to stimulate the consumption of opium by the Chinese.

In pursuance of this policy, the Government yearly regulates the extent of the poppy cultivation, guided chiefly by the market prices and the stock of opium in hand. No one is forced to grow a crop of poppy against his will. The sole inducement is the price offered by the Government for the produce. For the past ten years this price has been 5 rupees a seer, which is exactly equivalent to 2½ lbs. troy. The Government makes advances, not bearing interest, before the crop is sown, and from time to time during its progress, thus saving the ryots from the exorbitant demands of the village money-lender. The crop, which is sown in the autumn and gathered in the spring, succeeds an autumn crop usually of Indian corn. The yield of opium per acre varies. For the five years ending 1889-90, the average produce per acre was a little over 16 lbs. avoirdupois, which, at 5 rupees a seer, gave the cultivator a gross return of near 40 rupees per acre. In addition to this, he receives payment for the poppy flower petals and the stalks and leaves, which are used in the factory for packing the opium cakes. The total average annual payments by the Bengal Government to the poppy cultivators exceed Rs. 2,000,000.

Besides the produce purchased by the Government, the seeds of the poppy are an important article of consumption and commerce. They are eaten parched, or employed as a condiment in the preparation of food; but perhaps their chief use is for the expression of oil, for which purpose they are not only largely used in India, but are exported in considerable quantities, chiefly to Belgium, France, and the United Kingdom. The average produce of seed per acre, after deducting what is required for sowing, is stated to be about 260 lbs., yielding, by native processes, from 80 to 100 lbs. of oil. This oil is edible, and is used largely in Europe, either as a substitute for, or adulteration of, salad oil. It is also used for illumination, mixing with paints, soap, and varnish-making. The oil-cake is eaten by the poorer classes and by cattle, being rich in nitrogen. The young seedlings, which are removed at the first weedings of the crop, are sold and eaten as a salad. I may state that these by-products of the poppy crop are perfectly free from opium.

In spite, therefore, of the labour entailed in the culture of the poppy, which requires frequent watering, and in spite of the vicissitudes of the season, which greatly affect this crop, the cultivation is popular, and the refusal of licences is looked upon as a grievance by the ryots, as well as the landowners, to whom they pay their rent.

As I have already stated, the cultivator is bound by law to deliver the whole of the opium produced to the Government agents. It is then manufactured at the factories at Ghazipur or Patna, into the opium of commerce, under the supervision of the scientific experts who are employed by the Government. The greatest care is taken to preserve the purity of the drug and the uniformity of its consistence. It is owing to this care, added to the natural advantages of soil and climate, that Indian opium has maintained its high reputation in the Chinese market, where it is admitted by the practical test of price to be far superior to the drug produced in China. Sir Robert Hart, the Inspector-General in China, in a report written in 1881, states that "the native product sells for one-half of the price obtained for the foreign drug." By "consistence" is meant the per-centage of fine opium obtained after evaporating the moisture. The standard differs in the two agencies. At the Patna factory (Behar Agency) the standard is 75, and at Ghazipur (Benares Agency) the standard is 70, for what is called "Provision opium," that is, opium to be sold for export, while for Excise opium, intended for consumption in India, the standard at each factory is 90. By the end of July, the manufacture is finished, but the airing and drying are continued until October, when it is formed into balls, weighing each 3½ lbs. avoirdupois, and packed in chests. Forty balls are allotted to each chest of provision opium, which thus contains 140 lbs. From the difference of consistence a Behar chest contains 105 lbs. of fine opium, while a Benares chest only 98 lbs. of fine opium. A chest of Excise opium from the superior consistence contains one cwt. of fine opium.

The Provision opium is sent to Calcutta, where it is sold for export at auction by monthly instalments. The average quantity sold annually for the five years

ending 1889-90 was 55,349 chests. During the last three of these years, and to the end of 1891, it was 57,000 a year. During the present calendar year, 1892, it has been notified that not more than 54,000 chests will be sold. In determining the number of chests to be annually manufactured and sold, the Government is guided principally by the state of the reserve stock, the aim being to keep up a reserve equal to half a year's supply. It is also guided, as I have already stated, by the prices obtained at auction. If the prices rise much, production in China and Persia is stimulated, and it is necessary to increase the production in India to maintain its market; on the other hand, if the prices fall low, and opium becomes cheap, consumption is stimulated, and the production has to be restricted. The object of the Government, as I have explained, is to maintain, so far as possible, uniformity in the price, and thus to avoid fluctuations in the market and in the revenue.

The average annual auction sale proceeds for the five years ending 1889-90, were Rx. 6,267,703, giving the average of Rs. 1,132 per chest. In the year 1890-91 they fell below Rx. 6,000,000, owing to the extension of the cultivation in China. The published statistics of the exports of opium from Calcutta, closely conform to these figures, showing an average export of 56,388 chests, valued at Rx. 6,175,542.

The Bengal Government supplies the Excise Department not only in Bengal, but also in all the other provinces, except the Madras and Bombay presidencies, with opium for consumption in India. The average quantity so supplied is about 4,500 chests a year, and the price credited to the Opium Department is Rs. 7½ a seer, equivalent to Rs. 435 a chest. The average receipts from this source amount to Rx. 200,000 a year. The opium is sold to the consumers through licensed vendors, to whom it is supplied at an enhanced price, and who have to pay fees for the licenses to vend. The average receipts by the local governments from this source amount to about Rx. 800,000 a year.

The declared value of the poppy seed exported from Bengal on the average of the five years ending 1890-91, was Rx. 175,000.

Summing up these figures, we obtain the following result for the Bengal poppy crop:—

	Rx.
Auction sale proceeds on opium for export	6,000,000
Excise opium credited to opium department	200,000
Receipts of Provincial Government from the vend of Excise opium	800,000
Value of poppy seed exported	175,000
Total Rx.	7,175,000

In order to arrive at the ultimate annual value of the Bengal poppy crop, we must add several items which cannot be precisely estimated. These are the profits to Indian merchants and shippers on the opium exported, the profits to the Indian vendors of Excise opium, the value of the poppy seed consumed in India as seed-oil or oil-cake, and of the young plants used as food, and finally, the value of the illicit opium, which, in spite of all precautions, the cultivators are able to pass into consumption. On a moderate estimate, the value of this large trade cannot be taken at less than Rx. 3,000,000, bringing up the annual total value of the Bengal poppy crop to over Rx. 10,000,000, or, say, 7,000,000*l.* sterling.

The territory in which this crop is produced may be described as a belt of country between 500 and 600 miles in length, with an average breadth of 180 miles, running north-west and south-east, between the 78th and 85th parallels of longitude, and the 24th and 29th parallels of latitude. The total area may be taken at about 100,000 square miles lying in the provinces of Behar (Bengal), the North-West Provinces and Oudh. The average area cultivated with poppy for the five years ending 1889-90 was 527,200 acres, but in the last of those years was only 482,557, or 754 square miles, only three-quarters per cent. of the whole tract referred to, and this for only half the year, as another crop is almost invariably obtained from the same land during the other half. In the year 1889-90, no fewer than 1,322,355 cultivators were employed on the crop, while over 3,000 Hindoos and Muhamedans were employed by the Government in the factories and administration of the department.

The only other province in British India where the poppy is allowed to be cultivated is the Punjab. It is

there grown under license in nearly every district. In 1889-90, the total area so cultivated was 14,458 acres, or under 23 square miles. Formerly, an acreage duty of Rs. 2 per acre was charged throughout the province, but, under new rules, it may be increased to Rs. 8, and has been increased to Rs. 4 in several districts. The cultivator may dispose of his poppy crop standing, to license-holders, who extract the opium; or he may extract the opium himself, and dispose of it, or of the produce, in the shape of poppy heads, to licensed vendors. The average annual supply of opium from this source, for the three years ending 1889-90, was something over 1,650 maunds, which would be equivalent to 1,100 Bengal Excise chests, though, probably, the opium is less carefully manufactured, and is of a lower consistency. The poppy heads are used as an infusion, forming a poppy tea, which is drunk by the Sikhs, who are forbidden by their religion to use tobacco in any form. The value of the Punjab poppy crop can only be estimated. The average retail price of the opium is about Rs. 20 a seer, or Rs. 800 a maund, so that, from this source alone, it yields Rx. 132,000 on the average annual produce. Adding the value of the poppy heads, seed, and other by-products, and of illicit opium, which cannot fall short of Rx. 18,000, we get a total of Rx. 150,000, or say 100,000*l.*

Outside of British India, the cultivation of the poppy is confined to certain native states in Central India and Rajputana, and the territory of the Gaikwar. The opium there produced is known by the generic name of Malwa opium. There are no trustworthy statistics showing the acreage under poppy, or the total quantity of opium produced. After providing for the home consumption within the native states, which must be a very large quantity, as the habit of consuming opium there has been long established and is widespread, the remainder is consumed in those parts of British India not supplied with Bengal opium, also in Hyderabad and Mysore, or is exported by sea to China, the Straits Settlements, &c.

The importation of Malwa opium into British territory is subject to very stringent regulations. Previous to the year 1831, by separate treaties with the native States, the British Government reserved to itself a monopoly of Malwa opium, which was purchased by the British Resident at Indore, and sold by auction either at Bombay or Calcutta. But in that year it was deemed advisable, chiefly on account of the large quantity of opium smuggled to the Portuguese settlements on the coast, to relinquish the monopoly (which involved much unpalatable interference in the internal affairs of the native States), to open the trade to the operations of private enterprise, and to substitute, as a source of revenue, the grant, at a specified rate of duty, of passes to cover the transit of Malwa opium through British territory. This rate was at first fixed at Rs. 175 a chest, but as the resources of the administration for the prevention of smuggling improved, the British Government have been enabled gradually to increase the pass duty until it amounted to Rs. 700 per chest. In fixing the rate, regard is had to the prices obtained for Bengal opium. If the rate be too low, Malwa opium is unduly favoured in its competition with Bengal opium, and if it be too high, not only is smuggling encouraged, but the price of Bengal opium rises, leading to an increased cultivation of the poppy either in Bengal or in China. The present rate on opium for foreign export is Rs. 600 a chest, except on a small number of chests, weighed at Ajmere, where the rate is Rs. 625. The rate on opium imported for local consumption in the Bombay Presidency remains at Rs. 700 per chest.

All opium transported out of the native States of Central India, Rajputana, and Baroda, has to be weighed and tested at scales established at convenient places in those States under the superintendence of officers of the British Government. The transport is permitted only under passes granted on payment of the duty and by certain specified railway routes. The annual quantity passed at the scales may be taken now at 30,000 chests. A chest of Malwa opium contains the same quantity as a chest of Bengal provision opium, namely 140*lb.* avoirdupois; but its consistency is considerably higher, being from 90 to 95 per cent. of fine opium. Consequently, it has a higher average value. The average exports for the five years ending 1890-91 were 32,540 chests, valued at over Rx. 4,000,000. The remainder of the Malwa opium leaving the native States—about 2,000 chests—is consumed in India, chiefly in the Bombay Presidency; but the Madras Presidency, Hyderabad, and Mysore are also supplied

from this source, and some goes to the Punjab. The value of these 2,000 chests may be taken at about Rx. 250,000, making a total value, for 32,000 chests, of Rx. 4,250,000. To this must be added, as in the case of the Bengal opium, the profits of the merchants and shippers exporting the opium, and of the vendors in India, say nearly Rx. 1,500,000.

The average annual exports of poppy seed from Bombay are valued at Rx. 212,697. They amounted, in 1890-1, to Rx. 310,930. Thus, the total annual value of the Malwa opium brought into British territory, and of the Malwa poppy seed exported from India, cannot be less than 4,000,000L.

There remains to be considered the value of the Malwa opium consumed in the native states of Central India, Rajputana, and Baroda; also the value of the Malwa poppy seed not exported from India, and of the other by-products of the crop. As I have already said, there are no data available for ascertaining or estimating the acreage under poppy cultivation in the native states in question, much less for determining the quantity and value of the whole products of that crop. The population of those states is 21,750,000, or about one-tenth of the population of the rest of India. We know that the people of these states have, for centuries, been in the habit of consuming opium, we know that the restrictions placed on the cultivation of the poppy, and on the vend of opium in British India, do not exist in these states, and we know that a vast quantity of opium is smuggled out of them. If we estimate the value of the crop, exclusive of the value of the product licitly exported, at 2,000,000L, it will certainly be under the real value.

The total annual value of the poppy crops in India thus appears to be as follows:—

	£
Bengal crop	7,000,000
Punjab crop	100,000
Malwa crop, licitly consumed in British India and exported by sea	4,000,000
Malwa crop, consumed in Central India, Rajputana, and Baroda, and smuggled thence	2,000,000
Total	£13,100,000

This is divided between the producers and manufacturers, the landlords, the British and native administrators, the middlemen, merchants, shippers, vendors, &c. of India, and is paid by the ultimate consumers, principally Chinese.

Before leaving the commercial side of the question, there is one point to which I should like shortly to refer. It is the effect on the rupee exchanges which would be produced by the cessation of the opium trade from India to China. The disbursements of the Government of India in England, usually called the Home Expenditure, are now about 17,000,000L. annually. In order to provide this sum, the Secretary of State draws bills on India, which are purchased by persons in England who have to make payments, chiefly for the purchase of produce to be brought from the East for sale here. The Secretary of State's bills are, therefore, paid by the excess of exports from India over the imports to India. It is evident that, if there were a reduction in the excess exports from India, the demand for the Secretary of State's bills would be *pro tanto* reduced, and the exchange value of the rupee would fall. India exports to China—including the Treaty Ports—annually, merchandise to the value of near 14,000,000 of tens of rupees, the greater part of which is opium, and imports from thence merchandise and treasure of the value of very little over 5,000,000. How and where is the account adjusted? It is in England, to which China sends tea, silks, and other produce. Practically, therefore, the opium sent by India to China is paid for by remittances from England to India, which form part of the demand for the Secretary of State's bills. The cessation of this part of the demand would, therefore, have a very injurious effect on the rate of exchange at which those bills are sold, and would increase the heavy loss to which India is put by the rise in the silver price of gold.

Thirteen millions sterling is a very moderate estimate of the sum India is asked to sacrifice annually by suppressing her opium trade. The demand for this sacrifice is made not by the people of India; not by the people of China, not by the responsible administrators of those countries, but by an irresponsible

party of philanthropists seeking to obtain their ends by the despotic action of the Parliament of the United Kingdom, in which India has no representatives.

What are the reasons put forth for demanding the despotic destruction by a foreign country of a valuable Indian industry, which, besides satisfying an internal demand in India itself, provides one-tenth of the whole export trade of merchandise from India?

The basis of this demand is the hypothesis that, except for medicinal purposes, the use of opium is wholly pernicious, that it demoralises and ruins, body and soul, the consumer, and that it produces no countervailing benefits which for a moment can be compared with the evils it causes.

A second reason given is that the English people have created the demand for opium by the Chinese; that they have compelled the importation of Indian opium into China by force of arms, and that they are, therefore, morally responsible for the asserted degradation of the Chinese from the use of this drug.

I shall now proceed to examine the validity of these reasons, and I shall begin with the second.

If there is one fact more certain than any other connected with this question, it is that the people of China have used opium for centuries before the people of England had any voice in the affairs of India. A valuable "Historical Note on Opium in China" has recently been drawn up by Dr. Edkins, of the Chinese Customs Service, and published by order of Sir Robert Hart, the Inspector-General of the Imperial Maritime Customs of China. From this note it appears that opium was first brought to China by the Arabs early in the 8th century, and it is frequently mentioned by Chinese writers of that time. It seems at first to have been valued for its medicinal qualities; but that it was not confined to this is proved by quotations from the Chinese poets of the 10th century. One, named Su Ché, writing on the poppy, which he grew in his garden, says:—

"It is sown with wheat, and ripens with panicked millet; when growing, it may be eaten like the vegetables in spring. The seeds are like autumn millet. When ground, they yield a sap like cow's milk; when boiled, they become a drink fit for Buddha. Old men, whose powers have decayed, who have little appetite, who, when they eat meat, cannot digest it, and when they eat vegetables cannot distinguish their flavour, should take this drink. Use a willow mallet and a stone basin to beat it. Boil it in water that has been sweetened with honey. It restores tranquility to the lungs and nourishes the stomach. For three years the door has been closed, and I have gone nowhere and come back from nowhere. I see here the 'Hermit of the Shade' (a Taoist priest) and the long-robed Buddhist priest; when they sit opposite I forget to speak. Then I have but to drink a cup of this poppy-seed decoction. I laugh, I am happy, I have come to Ying-ch'uan, and am wandering on the banks of its river. I seem to be climbing the slopes of the Lu Mountain in the far West."

Recipes for the use of opium medicinally appear from time to time in the works of Chinese writers of every subsequent century. Barbosa, a Portuguese geographical discoverer, who wrote early in the 16th century, affords evidence that the Arabs had begun to grow opium in India, and that it was exported to Siam and Pegu; and that it was brought to Malacca by Arabs and Gentiles (Hindoo) to exchange for cargoes of Chinese junks. In the Chinese tariffs of 1,589 and 1,615 opium is entered and rated. After citing a mass of evidence on the subject, Dr. Edkins concludes that—

"It appears plain that from the latter part of the 15th century, the manufacture of native opium has existed in China; and it is not only in recent years that there has been both native and foreign opium in this country."

It was not, however, until the first half of the 17th century that the practice of smoking opium commenced in China. This practice followed on the introduction of tobacco which was brought to China about 1620. Dr. Edkins writes:—

"In the time of the last Ming Emperor, who reigned from 1628 to 1644, tobacco smoking was prohibited, but the habit spread too rapidly to be checked by law. The origin of opium smoking is thus accounted for. Various ingredients were in various countries mixed with tobacco to try their effect; among them was opium."

In spite of repeated prohibitory edicts the habit of tobacco smoking became almost universal.

"This immense popularity of tobacco smoking was an indication of the readiness of the Chinese nation to adopt the use of narcotics. The same thing which took place in the 19th century with opium smoking occurred in the 17th century with tobacco smoking. The Confucian mind was shocked, the sense of propriety was wounded; but this did not prevent the rapid spread of both these modes of indulgence in all circles. Prohibitory edicts were issued in vain by Emperors animated by paternal affection for their people."

Opium smoking seems first to have commenced in Formosa. A native author quoted in 1746 described the process of smoking opium mixed with tobacco and hemp. It was used as an aid to sensual indulgence. In the year 1729 an edict was issued on opium smoking, prohibiting under the severest penalties the sale of opium, and the opening of opium-smoking houses. From that time forward they have been in theory a crime, but in practice have never been so treated. Opium continued to be imported and passed at the custom-houses, and the cultivation of the poppy in China continued to extend. It was not until 1773, after the conquest of Bengal by Clive that English merchants took up the import trade, which had steadily increased in the hands of the Portuguese, and it was not until 1781 that the East India Company became the traders in the drug. In 1767 the imports into China are said to have reached 1,000 chests, and the duty was three taels a chest. The statistics of trade from India were not then registered with the care and accuracy introduced later by the East India Company. It will be seen that the Abbé Raynal, in 1770, gives an export of from 3,000 to 4,000 chests from Patna alone. It was nominally imported as a medicinal drug, but in practice was used as a medicine and for smoking. It is thus amply proved that the English are not responsible for the introduction or use of opium in China.

In the beginning of this paper I have shown that the extension of the opium trade is only a part, and not an undue part, of the general extension of foreign trade which has developed under the English administration of India. But, it is said, the English have forced this trade on the Chinese. The war with China, which terminated in 1842, has been called the Opium War, and its immediate cause was no doubt the seizure and destruction by the Chinese of a large number of chests of Indian opium belonging to English merchants. But contemporary history shows that the real objections of the Chinese were not to the import of opium, but to the necessity of paying for it in silver. Commander J. Eliot Bingham, who served in that war, and wrote its history, shows that the imports into China of opium, metals, cotton, &c., exceeded the exports of tea, silk, &c., by 2,500,000 sterling. The Chinese held the economic fallacy that this state of things was injurious to their country, as it drained away their silver. The Imperial edicts enlarged more on the abstraction of their sycee silver than on the injury from opium to the morals of the people. One high Chinese official memorialised the Emperor "to permit the barbarian merchants to import opium as a medicine, and to require that, after having passed the Custom House it shall be delivered to the Hong merchants only in exchange for merchandise, and that no money be paid for it;" and further, that the exportation of money and sycee silver be prohibited. But to whatever extent the wars with China were connected with smuggling of Indian opium, it is certain that since 1858, when the Treaty of Tientsin was signed the Chinese Government has had a perfectly free hand in the matter of the importation of opium. By that treaty certain commercial concessions were arranged which included the legitimatising of the import of opium, subject to a duty being levied thereon. But in the treaty itself there was no mention of or allusion to the opium trade. Lord Elgin wrote that he intentionally abstained from urging any treaty recognition of that trade. The preparation of the tariff devolved on Mr. Lay, the Chinese Secretary to Lord Elgin's special mission, at the desire of the Chinese no less than that of Lord Elgin. Mr. Lay, in a letter to the "Times" of the 22nd October 1880, wrote:—

"When I came to 'opium,' I inquired what course they proposed to take in respect to it. The answer was, 'We have resolved to put it into the tariff as foreign medicine.' I urged a moderate duty in view of the cost of collection, which was agreed to. This represents with strict accuracy, the amount of 'extortion' resorted to. . . . The Chinese Government admitted opium as a legal article of import, not under constraint, but of their own free will deliberately."

In the "Times" of the 25th of same month, a letter appeared from Mr. Laurence Oliphant, who was secretary to Lord Elgin's Mission, in which he confirmed the statement made by Mr. Lay. He says he, with the Commissioner appointed by the Chinese Government, went through the tariff elaborated by Mr. Lay with the subordinate Chinese officials:—

"When we came to the article 'opium' I informed the Commissioner that I had received instructions from Lord Elgin not to insist on the insertion of the drug in the tariff, should the Chinese Government wish to omit it. This he declined to do. I then proposed that the duty should be increased beyond the figures suggested in the tariff; but to this he objected, on the ground that it would increase the inducements to smuggling. . . . I trust that the delusion that the opium trade now existing with China was 'extorted' from that country by the British Ambassador may be finally dispelled."

In 1876, a convention or agreement, called the Chefoo Convention, was arrived at between the Governments of Great Britain and China, in which the British Minister, Sir Thomas Wade, promised to move his Government to make certain special arrangements as to the import of opium. These arrangements were finally carried out by an additional Article, signed at London in 1885. By this Article an addition to the import duty of 30 taels per chest was agreed to. It amounts to a further 80 taels per chest, and frees the opium from any further duty or tax whilst in transport in the interior, being, in fact, a composition of the *likin* tax. When the package is opened at the place of consumption, it is subject to any tax which may be levied on native opium.

During the three years ending 1890, the average import of opium into China was 78,360 piculs or chests, valued at 30,577,235 Haikwan taels. The average import duty was 2,355,650 taels; the opium *likin*, 6,278,922 taels, making a total receipt averaging 8,634,572 Haikwan taels per annum. What is called the par value of a Haikwan tael, measured in gold is 6s. 8d., that is, there are three such taels to the pound sterling. At this rate, the receipts of the Chinese Government from the import of opium are equivalent to 2,878,000*l.* a year. The great appreciation which has taken place in the value of gold has, of course, lowered the exchange value of the silver tael, and this, no doubt, affects China in the payment of debts to gold standard countries; but for internal purposes the value of the tael has been little affected. This large revenue, equal now to about 2,000,000*l.*, and forming more than one third of the entire Customs revenue of China, is collected by the department presided over by Sir Robert Hart—a department admirably administered, and scrupulously accounting for its collections to the Imperial Government at Peking. The *likin* for which the payment of 80 taels per chest is a composition, was formerly collected as transit duties by the local Chinese authorities through whose provinces the opium passed. The Imperial Government received only such portion of the collections as they could manage to get out of the Provincial Governments, who, on the other hand, strove to retain as much as possible. The arrangements under the Chefoo Convention are, therefore, very advantageous to the Imperial Government at Peking, which cannot afford to dispense with this large revenue derived from the import of opium.

Another result of the Chefoo Convention has been greatly improved arrangements for the prevention of smuggling of opium from Hong Kong. A mixed Commission was appointed, including a Chinese officer of high rank, which resulted in an Ordinance of the Hong Kong Legislature passed in May 1887, by which the movement of opium into, within, and from Hong Kong is strictly regulated with the view to the prevention of smuggling into China.

It is clear then that Indian opium is now imported into China with the full approval and consent of the Chinese Government, who are at liberty to terminate the present arrangement at any time by giving twelve months' notice of their desire to terminate it. It is equally certain that Great Britain would never fire a gun to force Indian opium on the Chinese.

I have already referred to the early history of opium in China. Sir Robert Hart said, in 1881, that "Native opium was known, produced, and used long before any European began the sale of the drug along the coast." The production of opium in China has gone on steadily increasing, and has been encouraged by the restrictions and heavy taxation placed on India opium by the Government of India. All travellers and the consular

authorities testify to the vast areas under poppy cultivation. The produce of native opium has been estimated to be from three to ten times the quantity of the imported drug. Chinese opium is now much better prepared than it formerly was, and it has practically driven Indian opium out of the markets of Northern China, and, so far as we know, it supplies the bulk of the demand in the inland and western provinces. The local drug is much cheaper than imported opium. The Burma revenue officers are constantly striving to prevent importation of cheap Chinese opium into Burma.

Of the numerous recent travellers in China I will quote only Mr. Hosie, a consular agent, who, in 1883, travelled from February to June through the provinces of Sse-ch'nan, Yunnan, and Kweichow. His diary has almost daily references to the extensive poppy cultivation through which he passed. In many places it was the principal crop. With regard to the Government prohibition he writes:—

"I have noticed in several places west of the provincial capital a proclamation, dated the 9th November 1882, by the Governor-General of Sse-ch'nan, prohibiting the cultivation of the poppy, and enjoining a more extended sowing of the cereals. It was always more or less mutilated, whether intentionally or not I cannot say. At all events poppy was frequently growing on the side of the road opposite to that on which the proclamation was posted. It is one thing to issue instructions, another to see that they are carried out."

The prohibition is evidently in the nature of a pious opinion, meant for show and not for use.

Mr. Hosie, writing on the 5th June 1883, says:—

"It seems superfluous daily to mention poppy as a crop. To-day, however, it was exceedingly prominent, growing everywhere on the hill-sides and bottom lands. Large rice bowls, heaped with the drug, were exposed at the door of almost every shop in every hamlet and village, not a bowl here and there, but several, eight being a very common number. In fact the whole country reeks and stinks of opium."

With these facts before us, how can it be maintained that the consumption of opium in China can be affected by the imports of Indian opium, except in so far that those supply a purer and more expensive article, the suppression of which would lead to larger products of native opium of inferior quality?

I will here quote the opinion of the Rev. F. Galpin, of the English Methodist Free Church, a respected missionary at Ningpo, an important port on the east coast of China. When asked, about ten years ago, to join in a petition to the House of Commons against the opium, he refused to do so, and, in his letter of refusal, wrote:—

"I beg to express my hearty dissent from the idea presented in the petition that the Chinese people or Government are really anxious to remove the abuse of opium. The remedy has always been, as it is now, in their own hands. Neither do I believe that if the importation of Indian opium ceased at once, the Chinese Government would set about destroying a very fruitful means of revenue. On the contrary, I feel sure that the growth of Chinese opium would be increased forthwith."

I could multiply to any extent the evidence of the extensive cultivation of poppy in China, but I think I have said enough to show that it is a fact which cannot be denied.

I will now proceed to discuss the crucial question as to the effects of consuming opium, of which there are various forms. In China the usual form is by what is called smoking opium. In India it is eaten. In Europe it is drunk in the form of laudanum, or a tincture prepared in spirits of wine. We must consider what is the effect on the average consumer, and not confine our attention to the cases of those persons only who indulge in the habit to excess, cases which I shall show are exceptional.

The Anti-Opium Society look at only one side of this question, and they arrive at their conclusions by generalising over the whole number of opium consumers the results observed or recorded in the case of frequenters of what are called "opium dens." Even in these cases they make no allowance for the fact that many of the indulgers in the drug have been led to the habit by painful diseases, from which they have sought and found relief in opium, and that these diseases—not due but antecedent to the resort to the drug—largely account for the wretched appearance and condition of the patients. This is much as if one who derived his knowledge of the effects of alcohol solely from the gin palaces, or lower drinking shops in London, should con-

clude that habits of intoxication, brutality, and social and physical degradation there to be seen, were typical of the mass of alcohol consumers in England; in short that everyone who was not a total abstainer was a confirmed drunkard. We know this is untrue, and that the great body of Englishmen, whether of the upper or the working classes, take their liquor in moderation, and with positive benefit to themselves. So, too, with the consumers of opium in China and India. To prove this there is the evidence of numerous Englishmen who have resided for a long time in those countries, and whose duty it has been to acquaint themselves with the facts. Some of this evidence I will put before you.

It may be safely said that all but a very small percentage of the people of this country are absolutely ignorant of the normal effects of the habit of using opium. The popular ideas on the subject which prevail are largely due to Thomas De Quincey, who, in 1822, published the confessions of an English opium eater. Many have read this fascinating work, and many more have heard of it, and look upon De Quincey as the "shocking example" of such a habit. But I venture to say that his confessions completely disprove the allegations put forward by the opponents of the use of the drug. De Quincey (I am quoting Mr. Henry Morley) inherited a delicate and nervous constitution. His father died of consumption at the age of 39. In his youth he ran away from school, and, in the course of his subsequent adventures, passed through a period of hardship and want. He wrote that while wandering in Wales, where he seldom slept under a roof, he was reduced to one meal a day.

"From the keen appetite he says, produced by constant exercise and mountain air, acting on a youthful stomach, I soon began to suffer greatly on this slender regimen, for the single meal which I could venture to order was coffee or tea. Even this was at length withdrawn, and afterwards, so long as I remained in Wales, I subsisted either on blackberries, hips, haws, &c., or on the casual hospitalities which I now and then received in return for such little services as I had opportunity of rendering."

Soon after this he came to London.

"And now began the latter and fiercer stage of my long sufferings; without using a disproportionate expression, I might say, of my agony. For I now suffered, for upwards of 16 weeks, the physical anguish of hunger in various degrees of intensity, but as little perhaps as over any human being can have suffered who has survived. . . . Let it suffice to say that a few fragments of bread from the breakfast-table of one individual (who supposed me to be ill, but did not know of my being in utter want), and these at uncertain intervals, constituted my whole support."

To these hardships he attributes the pains, which subsequently drove him to the daily use of opium. In 1804, when he was just 19 years of age, after suffering for about 20 days from excruciating rheumatic pains of the head and face, with hardly any respite, at the advice of a friend he took his first dose of laudanum. He thus describes the result:—

"That my pains had vanished was now a trifle in my eyes; this negative effect was swallowed up in the immensity of those positive effects which had opened before me—in the abyss of divine enjoyment thus suddenly revealed."

From this time, for about eight years, he regularly took laudanum, though not daily. He writes: "And 'how do I find my health after all this opium eating?' And he thus answers the question:—

"If I dared to say the real and simple truth, though to satisfy the theories of medical men I ought to be ill, I never was better in my life than in the spring of 1812; and I hope sincerely that the quantity of claret, port, or 'particular Madeira' which, in all probability you, good reader, have taken, and design to take, for every term of eight years during your natural life, may as little disorder your health as mine was disordered by the opium I had taken for eight years between 1804 and 1812."

In this last year he suffered much in bodily health from distress of mind connected with a very melancholy event, and in 1813 the internal pains he had suffered from in his boyhood again attacked him. He then began to take opium daily, and the habit so grew upon him that in a few years he was taking it at the rate of 340 grains a day, or about half a pint of laudanum. With marriage in view he gradually reduced it 40 grains. In 1816 he married, and had a large family of sons and daughters. He occasionally relapsed into excess of opium-taking, until the close of 1844. From that time

he reduced his allowance to 6 grains a day, and in his latter years De Quincey's life passed peacefully, free wholly from distress of mind. He died in 1859, in his 75th year. Here we have, then, the instance of a man, of a naturally delicate and nervous constitution, whose early life was subject to great physical hardship, who from the age of 19 indulged in the use of opium—for a long period in excessive quantities—and who yet retained his mental qualities unimpaired, led an active literary life, was one of the most brilliant, accomplished, and intellectual writers England has produced, and who lived to the good age of 75 years.

Now what does De Quincey, with his unparalleled experience, say of the effects of opium-taking? Here are his own words with respect to its bodily effects:—

"Upon all that has hitherto been written on the subject of opium, whether by travellers in Turkey (who may plead the privilege of lying as an immemorial right) or by professors of medicine, writing *ex cathedra*, I have but one emphatic criticism to pronounce—Lies! lies! lies!"*

Again—

"It is not so much affirmed as taken for granted, by all who ever mention opium, formally and incidentally, that it does or can produce intoxication. Now, reader, assure yourself, *meo periculo*, that no quantity of opium ever did or could intoxicate. As to the tincture of opium (commonly called laudanum), that might intoxicate if a man could bear enough of it. But why? Because it contains so much proof spirit, and not because it contains so much opium. But crude opium, I affirm peremptorily, is incapable of producing any state of body at all resembling that which is produced by alcohol, and not in degree only incapable, but even in kind. It is not in the quantity of its effects merely, but in the quality that it differs altogether. . . . The main distinction lies in this, that whereas wine disorders the mental faculties, opium on the contrary (if taken in a proper manner), introduces amongst them most exquisite order, legislation, and harmony."

With respect to the allegation that the elevation of spirits produced by opium is necessarily followed by a proportionate depression, De Quincey simply denies it—

"Assuring my reader that for 10 years, during which I took opium at intervals, the day succeeding to that on which I allowed myself this luxury was always a day of unusually good spirits."

Again—

"With respect to the torpor supposed to follow, or, rather (if we were to credit the numerous pictures of Turkish opium eaters), to accompany the practice of opium eating, I deny that also. Certainly, opium is classed under the head of narcotics, and some such effect it may produce in the end; but the primary effects of opium are always, and in the highest degree, to excite and stimulate the system. This first stage of action always lasted with me, during my noviciate, for upwards of eight hours; so that it must be the fault of the opium eater himself if he does not so time his exhibition of the dose (to speak medically) as that the whole weight of its narcotic influence may descend upon his sleep."

De Quincey, in fact, used to take his dose before going to the Italian Opera, as he found it greatly increased his mental activity and appreciation of the entertainment. He observes that it is remarkable that, during the whole period of years through which he had taken opium, he had never once caught cold (as the phrase is); not even the slightest cough. It was not until De Quincey commenced to wean himself from the habit of taking excessive doses of the drug, that he experienced what he calls the pains of opium. It kept its hold on him "by the tortures connected with the attempt to abjure it." Nevertheless, he succeeded, in a few weeks, in bringing down the quantities to a moderate amount. He writes: "The issue of my case 'is at least a proof that opium, after a 17 years' use' and an eight years' abuse of its powers, may still be renounced."

So much for the experiences of an English opium eater. They are quite consistent with the assertion that the moderate use of opium, by a person in good health, may be continued for years, not only without any harmful effects, but with absolute benefit.

Let us now see what is the effect on the Chinese, who resort to the more innocuous habit of smoking opium. In February 1882 three lectures were given in St. James's Hall by the late Mr. William Brereton, and were subsequently published under the title, "The Truth About Opium." Mr. Brereton lived and practised as a solicitor for nearly fifteen years in Hong Kong, where he had daily experience of the custom and effects of opium smoking. He was in no way engaged in the opium trade, and had no pecuniary interest in it, but felt it is his duty to endeavour to dispel what he called the unfounded delusions which have taken possession of the public mind on the subject. His book is a storehouse of facts and arguments. It is written in a bright and intelligent style, and I strongly recommended its perusal to anyone interested in the question. The facts have never been denied, or the arguments answered by anyone having a personal knowledge of the subject. I shall take the liberty of quoting largely from this book.

Mr. Brereton commences by stating that, having had daily intercourse with the people from whom the best and most trustworthy information on the subject of opium and opium smoking could be obtained, his experience is that opium smoking as practised by the Chinese is perfectly innocuous, and that this is a fact so patent that it forces itself upon the attention of every intelligent resident in China who has given ordinary attention to the subject. He quotes numerous high authorities in support of this view. The first is Dr. Philip Ayres, Inspector of Hospitals of Hong Kong for many years, who both in India and in China made the subject of opium consumption a special study, and who had a large native practice amongst the Chinese.

In a report to the Government of Hong Kong for the year 1881, Dr. Ayres wrote:—

"I have come to the conclusion that opium smoking is a luxury of a very harmless description."

In an article of the "Friend of China," written by Dr. Ayres, he says:—

"My opinion is that it (opium smoking) may become a habit, but that that habit is not necessarily an increasing one. Nine out of twelve men smoke a certain number of pipes a day, just as a tobacco smoker would, or as a wine or beer drinker might drink his two or three glasses a day, without desiring more. I think the excessive opium smoker is in a greater minority than the excessive spirit drinker or tobacco smoker. In my experience, the habit does no physical harm in moderation. . . . I do not wish to defend the practice of opium smoking, but in the face of the rash opinions and exaggerated statements in respect of this vice, it is only right to record that no China resident believes in the terrible frequency of the dull, sodden-witted, debilitated opium smoker met with in print, nor have I found many Europeans who believe that they ever get the better of their opium smoking comrades in matters of business."

Another authority is Mr. John Crawford, F.R.S., a *savant* of high reputation, who had been Governor of the Straits Settlements, and who had resided and travelled for many years in those parts of the East and India. In 1856, he published a "Dictionary of the Indian Islands and Adjacent Countries." This is what he writes about opium:—

"Opium is at present largely consumed in the Malayan Islands, in China, in the Indo-Chinese countries, and in a few parts of Hindustan, much in the same way in which ardent spirits, malt liquor, and cider are consumed in Europe. Its deleterious character has been much insisted on, but, generally, by parties who have had no experience of its effects. Like any other narcotic, or stimulant, the habitual use of it is amenable to abuse, and as being more seductive than other stimulants, perhaps more so, but this is certainly the utmost that can be safely charged to it. Thousands consume it without any pernicious results, as thousands do wine and spirits, without any evil consequence. I know of no person of long experience and competent judgment who has not come to this common-sense conclusion."

He then proceeds to quote Dr. Oxley—

"A physician and naturalist of eminence, and who has had a larger experience than any man of Singapore, where there is the highest rate of the consumption of the drug."

Dr. Oxley wrote:—

"The inordinate use, or rather abuse, of the drug most decidedly does bring on early decrepitude, loss of appetite, and a morbid state of the secretions; but I have seen a man who has used the drug for 50 years

* Since De Quincey wrote this, the views of the medical profession as to the effects of opium consumption (especially such members of the profession as have had wide experience in India and China) have greatly modified, and are now more in accordance with the conclusions of De Quincey.

in moderation, without any evil effects; and one man I recollect in Malacca who had so used it was upwards of eighty. Several in the habit of smoking it have assured me that, in moderation, it neither impaired the functions nor shortened life; at the same time, fully admitting the deleterious effects of too much."

Mr. Crawford sums up the question by this assertion:—

"Not the use, then, but the abuse of opium is prejudicial to health, but in this respect it does not materially differ from wine, distilled spirits, malt liquor, or hemp juice."

Dr. Eatwell, First Assistant Opium Examiner in the service of the Government, gave the following evidence:—

"Having passed three years in China, I may be allowed to state, as the result of my observation, and I can affirm thus far, that the effects of the abuse of the drug do not come very frequently under observation, and that when cases do occur, the habit is frequently found to have induced by the presence of some painful chronic disease, to escape from the suffering of which the patient has fled to this resource. . . . As regards the effects of the habitual use of the drug on the mass of the people, I must affirm that no injurious results are visible. The people are generally a muscular and well-formed race, the labouring portion being capable of great and prolonged exertion under a fierce sun, in an unhealthy climate."

Dr. Eatwell concludes by observing that:—

"The proofs are still wanting to show that the moderate use of opium produces more pernicious effects upon the constitution than does the moderate use of spirituous liquors; whilst, at the same time, it is certain that the consequences of the abuse of the former are less appalling in their effect upon the victims, and less disastrous to society at large, than are the consequences of the abuse of the latter."

For many years previous to 1858, Dr. Sinibaldo de Mas had been the Envoy Extraordinary and Minister Plenipotentiary of the Court of Spain at Peking. He had travelled much in China, India, Java, Borneo, and Malacca, and learned the Chinese language. In 1858 he published a book in French entitled "*L'Angleterre, le Chine, et l'Inde*," in which special reference is made to the opium question, with which he says he had made himself fully acquainted. I will only quote a few words:—

"It is a well known fact that in all these countries, notwithstanding their unwholesome climates, the opium-smoking Chinese are remarkably healthy and strong. These very opium-smokers are employed as farm labourers, masons, and porters, enduring great fatigue and performing the most arduous labours: they have acquired such an excellent reputation as colonists that efforts have been made during the last few years to induce them to settle in Lima and Cuba. The percentage of deaths among these people does not exceed the usual rate, and I must confess that having known numbers of Chinese emigrants in the various countries I have mentioned, I have never heard of a single death or any serious illness having been caused by opium smoking."

Baron Richthofen, the most experienced traveller who ever visited Sse-ch'uan, after noticing the extraordinary prevalence there of the habit of opium smoking, says:—

"In no other province except Hunan did I find the effects of the use of opium so little perceptible as in Sse-ch'uan."

Mr. Colman Baber, who knew more of that province and its people than any living Englishman, says:—

"Nowhere in China are the people so well off, or so hardy, and nowhere do they smoke so much opium."

Mr. W. Donald Spence, Her Majesty's Consul at Tchang, in 1881, visited the capital of Sse-ch'uan. He reported the enormous extent of the cultivation of the poppy, and described whole districts as being one vast poppy field, and he thus speaks of the people:—

"I found the people of Sse-ch'uan stout, able-bodied men, better housed, clad, and fed, and healthier looking than the Chinese of the Lower Yang-tse. I did not see amongst them more emaciated faces and wasted forms than disease causes in all lands. People with slow wasting diseases, such as consumption, are, if they smoke opium, apt to be classed amongst the 'ruined victims' of hasty observers; and amongst the cases of combined debility and opium smoking I saw, some were, by their own account, pseudo-victims of this type. There were some, too, whose health was com-

pletely sapped by smoking combined with other forms of sensual excess. And no doubt there were others weakened by excessive smoking simply, for excess in all things has its penalty. But the general health and well-being of the Sse-ch'uan community is remarkable: to their capacity for work and endurance of hardship, as well as to the material comforts of life they surround themselves with, all travellers bear enthusiastic testimony."

Time will not allow me to extend these quotations, although there is a mass of concurrent evidence on the subject. I will, however, add that of Sir Henry Pottinger, H.M.'s Governor-General and Minister Plenipotentiary in China, contained in a despatch written some 60 years ago, to the Foreign Office:—

"I cannot admit in any manner the idea adopted by many persons, that the introduction of opium into China is a source of unmitigated evil of every kind and a cause of misery. Personally, I have been unable to discover a single case of this kind, although I admit that, when abused, opium may become most hurtful. Besides, the same remark applies to every kind of enjoyment when carried to excess; but, from personal observations since my arrival in China; from information taken upon all points; and, lastly, from what the mandarins themselves say, I am convinced that the demoralisation and ruin which some persons attribute to the use of opium, arise more likely from imperfect knowledge of the subject and exaggeration, and that not one hundredth part of the evil arises in China from opium smoking which one sees daily arising in England, as well as in India, from the use of ardent spirits, so largely taken in excess in those countries."

The picture drawn by the opponents of opium is that those who are in the habit of using it are a set of degraded, depraved, miserable wretches, enfeebled in mind and body, unfit for the active duties of life—thieves, vagabonds, and beggars. They do not admit—or, at any rate, never refer to the possibility of—the existence of moderate consumers, who, although they take their daily dose, are not only none the worse for it, but are actually benefited. The only exception which I have found is the Venerable Archdeacon Moule, who was for many years a missionary in China, and who has recently published his recollections of his life in that country. The Archdeacon is violently opposed to the opium trade, and has no words too bad for it: but he writes:—"Instances which have come under my notice 'make me think that opium smoking is already 'taking the place, not of abuse of alcohol (which it 'has hitherto held) in Chinese moral estimation, but 'of the use of alcohol; and that it is becoming possible to take the drug in moderation.' He very sensibly adds that the Chinese have a fair right to say to the English people, 'If you would prohibit our 'opium, abolish your alcohol.'"

But this ingenuous discovery of the possibility of the Chinese taking opium in moderation, as the mass of Englishmen take alcohol in moderation, has been known to every resident of China who has taken the trouble to inform himself of all the facts, and has not confined his attention to opium dens.

I will now examine the evidence as to the effect of opium consumption by the people of India. A Parliamentary Blue Book was published on this subject a few weeks ago. It contains the reply of the Government of India to a memorial of the Society for the Suppression of the Opium Trade, complaining of the increased consumption of the drug in India—a complaint which has been triumphantly disproved. This Blue Book contains the opinions of experienced officers engaged in the administration of the country, writing from their own personal knowledge, which it was a part of their duty to acquire, as to the effects of opium consumption on the people of India.

Now, let us see what these experienced gentlemen say. I will quote their evidence from every part of India.

The Province of Assam has a population of a little over 4,000,000, or about 2 per cent. of the whole population of British India. They consume 13 per cent. of the whole quantity of opium retailed by licensed vendors in British India. The following is the testimony of Mr. Driberg, Commissioner of Excise in Assam:—

"I am not prepared to admit that the present use of opium in Assam is a 'vice.' In most cases it is a necessity. When we first acquired Assam (I now speak of the Assam Valley) every villager grew his own opium, just as he now does his vegetables or his

chillies for his curry. He has no tax to pay for his opium field, no restrictions placed on him. The former rulers recognised that a certain amount of the drug was necessary. Taking it broadly, and excluding tea gardens, the valley is inhabited by two classes; the Cacharies, Lalongs, Meches, and other aboriginal tribes, who reside on the higher submontane tracts, or along the high banks of the larger rivers, and the Hindus, the Kolitas, Koshes, Keots, and others who reside in the low-lying country, subject annually to inundation, and always damp. The former people do not use opium; they do not require it; but the lowlanders use it. They are the opium eaters of Assam. They live in a low, damp part of the country. Year after year parts of their villages are submerged and temporarily abandoned; and these people use opium to counteract the damp and malaria. They themselves say that they would die from fevers, if they did not use opium; and I have known medical men, who have had much experience of the province, hold the same view. These people are opium eaters, but not of the class described in the papers. They are good agriculturists, good subjects, and good fathers of families. They take their opium just as a good Englishman would take his peg. Of course, there are Assamese who take too much opium, just as there are Englishmen who take too much liquor; but, that opium eating is always a vice I am not prepared to admit, so far as Assamese are concerned; and, that it is increasing, I deny, and the statement I have referred to proves my view. In the Surma Valley, little opium is consumed. The people there use ganja, rather than opium; and even there, the consumption of this drug is smaller now than it was in 1874-75, and the duty is higher."

The views of Sir Charles Elliott, Lieutenant-Governor of Bengal, an officer of long and wide experience in India, will be gathered from the following paragraph of his report to the Government of India:

"As to the proposal to limit the possession of opium to one tola instead of five, its effect on the ordinary consumer of opium would be undesirable. A quarter of a tola is a common, perhaps the commonest, dose taken daily by those who are addicted to the use of opium, and it is within Sir Charles Elliott's personal knowledge and experience that this quantity is taken by innumerable persons in all parts of India, from Rajputana and the Punjab to Assam, without any injury or physical deterioration; that heavy tasks are easily performed under the stimulus it supplies; and that the prevalent belief is that the stimulus is wholesome, even in a dry climate, and is especially beneficial in moist and marshy countries like Eastern Bengal. The consumer of such a dose can now procure his supply for 20 days by one visit to an opium shop; if the limit were reduced to one tola, he would require to visit the shop every four days—an annoyance which there is no reason for imposing upon him, and the imposition of which would lead to increased smuggling and to breaches of the law."

The opium agent of Behar writes:—

"We have to consider the consumers of opium in the malarious alluvial tracts which form a great proportion of the area of these provinces. The use of opium by these people is not so much a vice as a necessity. Their vegetable diet would not keep them alive without stimulants, and I doubt whether it would be for their benefit to stop their opium and drive them to ganja or spirits. On the comparatively dry laterite soil the people are spirit drinkers. On the alluvial mud they either use opium or the far more deleterious ganja.* I do not believe that the prevention of the cultivation of the poppy in British India would cut off the supply of a drug which bears so high a value as opium, which the people believe to be so necessary to them, and which from its small bulk is, if the smell is disguised, very easily smuggled. I also doubt whether there is any equally efficient febrifuge within the reach of the people, and whether their health would not suffer greatly if they could not procure opium. It does not appear to produce such insanity as ganja does, and where people are as well fed as the Mahomedan ryots of Eastern Bengal, I am informed that opium smoking does not injure them. It is said to be opium smoking on insufficient food that affects the health."

"In conclusion, I may say that I believe there has been much exaggeration as to the scenes of intoxication to be witnessed in the chandu and madak shops. As I have already said, there is none in the retail opium

shops. I have visited shops in which more than a score of persons have been smoking chandu or madak without seeing any person lying intoxicated, or unable to answer my questions intelligently. I have also, however, seen persons in other shops lying asleep, and presumably intoxicated, but not many. It is, I believe, usual for the smokers of chandu, the Chinese preparation of opium, to sleep, presumably intoxicated, before leaving the premises; but in the madak shops this is by no means always the case, and I have seen many get up and go away quietly from the shop after smoking the drug. They have told me that they have no desire to sleep after it."

The Commissioner of Excise in the Central Provinces writes:—

"The eating of opium (as distinguished from smoking it) in moderate quantities, though generally held in disrepute and regarded as a vice by those who do not indulge in it, is not considered to be always harmful. Indeed, the current belief is that in certain localities and for certain ages and constitutions its use may be actually beneficial and conducive to health and longevity."

The Financial Commissioner of Burma says:—

"The Chinese at Bhamo and also in Mergui assured me that they could not exist in malarious countries, such as those in which the jade and amber mines and the tin mines are situated, without opium. As far as I know the use of opium is universal amongst the Chinese and hill tribes in feverish tracts. I believe that they seldom abuse the use of the drug, and I have every reason to suppose that its use is beneficial under certain conditions."

Sir Charles Aitchison, who was Chief Commissioner of Burma, says:—

"There are large numbers of the non-Burmese community, constituting perhaps the most thriving and industrious section of the population, to whom the drug is a necessity of life, and by whom it is rarely abused."

Mr. Copleston, the Commissioner of Excise in Burma, gives similar testimony. He says:—

"The use of opium by the Chinese and natives of Madras, who consume a considerable quantity, is not known or believed to work special evil either to individuals or to society, the reason being that these people do not abandon labour and active pursuits in order to eat or smoke opium, and its bad effects are therefore thrown off. The Chinese especially are well nourished, and this fact, too, appears to be an important one. In this case opium may almost be called a legitimate luxury."

It is true that the authorities in Burma seem to have arrived at the strange conclusion that opium is a benefit to everyone in that country, except the Burmese themselves, to whom it is said to be an unmitigated evil. No definite evidence of this is adduced. It seems to be based on the expressed opinion of certain Burmese gentlemen who do not use the drug.

The Government of Madras reports the result of the visit by an official to most of the "opium dens" in the town of Madras:—

"1. Most of the smoking dens were visited, and in each from 10 to 20 smokers were seen. They were of all ages—from 20 to 60 years of age—and comprised both Muhammadans and Hindus. Several professions were represented—jutka drivers, native doctors, musicians, professional beggars, butchers, sweetmeat sellers, and petty shop-keepers. Some were smokers of a few months, some of 20 and 30 years' standing."

"2. In most cases the smokers left immediately after they had finished their smoke. They purchased 8 pies to 2 annas and 6 pies worth each. Each smoker usually brought some sweetmeats or sugar-cane with him, and ate or chewed it while smoking. This, it was said, was done as the opium produced a bitter taste in the mouth."

"3. To see any smoker more affected than a man who had taken his usual glass of liquor was very rare, and in such cases it was said that the man had either taken his smoke out of time or had smoked more than he was used to."

"4. No women or children were seen in the dens, and it was stated that they do not frequent them."

"5. Cases of emaciation from the effects of opium smoking were not seen. Many of the old smokers seen were, on the contrary, very robust and well-conditioned; notably among these might be mentioned the keeper of one of the dens, a Chinaman, who is reported to have smoked for over 30 years, and who is now over 50 years of age; a vendor of country spirits, a smoker for over

* Hemp.

20 years; and a Muhammadan Hakim of about 45, who has smoked for over 10 years.

"6. Most of those spoken to admitted that the habit once contracted was difficult to give up, but they said that it did them no more harm than the workmen's glass of liquor did, if they did not exceed their usual quantity.

"7. Several complaints were made that the opium was now so dear, that what a few years ago cost 3 or 4 pies could not now be purchased for 1 anna."

The report from the Government of the North-West Provinces does not enter into the question of the effect of consumption of opium on the people. The poppy is largely cultivated in these provinces, and the facilities for the illicit use of the drug are naturally great. The absence of any mention in the Government reports of any marked evil effects on the population is, at any rate, negative evidence that no glaring abuses exist.

The Government of the Punjab reports:—

"The ratio of consumption of opium to population is not so high as to be a cause of anxiety in regard to the health and morals of the people. In the few tracts where the habit may be said to be general among certain classes of the population, it is of old standing, and does not seem to do so much harm as might be expected. The people, on the contrary, assert that they find it a protection against fever."

The Commissioner of Excise in that province writes:—

"The Government of India requests that the general questions raised may be discussed as far as they affect the Punjab, and in replying to the Government of India it should, I think, be forcibly pointed out that, apart from financial considerations, any attempt to prohibit the sale of opium, except for medicinal purposes, would in this province be most unpopular, and consequently politically inexpedient; while, if the poppy were grown without restriction, and the sale of opium were allowed free, the consumption of opium and its preparations would inevitably increase. Sikhs, Hindus, and Muhammadans alike eat opium, and at present the residents in the Phulkian States are the largest consumers.

"The memorialists themselves admit that in malarious tracts opium is useful as a prophylactic, and I think that the opportunity afforded by the presentation of this memorial should be taken to state clearly that the poppy has been cultivated and opium eaten in the Punjab from a period antecedent to British rule: that the drug, when taken in this form in moderation, is not believed to be necessarily prejudicial; and that, although indulgence in the habit may legitimately be restricted by taxation, and thereby made a source of revenue to the State, prohibition and unrestricted consumption are alike out of the question."

The collector of Nasik, in the Bombay Presidency, writes:—

"My own opinion is—and it is formed after 23 years service actually among the people and in nearly every part of the Bombay Presidency and of the Mysore Province—

"1. That opium smoking or eating, as practised by the vast majority of people who use the drug, is not carried to excess.

"2. That the moderate consumption of opium is no more harmful than the moderate consumption of liquor, and in many cases, like the moderate consumption of liquor, is distinctly beneficial.

"3. That the increased revenue from opium is due (a) to the more effectual steps to prevent smuggling, (b) to the increasing population, and (c) to the increasing prosperity of the people, which gives them more money to spend on luxuries.

"4. That the 'opium sot' is a much less harmful person to his family and to his neighbours, and the community generally, than the drunkard; and

"5. That Government, even if it tried, could no more prevent the consumption of opium than the consumption of drink. It would be useless to attempt to achieve either end: it would be worse than useless. It would, in my opinion, be a blunder, for I can see no weight in the reasoning that would prevent the vast bulk of the population indulging moderately in the opium luxury, simply because a very small minority harm themselves by indulging in it to excess.

"As regards those parts of India which I know well, and those alone, it is a gratuitous assumption that opium smoking causes 'widespread misery and demoralisation,' and so also is it that 'the British connexion with the opium trade' is a 'serious hindrance to missionary work.' Apart from the fact that the Govern-

ment of India has nothing to do with missionary work, I have never once in 23 years heard a single missionary—and I have met dozens—specially refer to or quote the opium trade as interfering with his endeavours. The proposition is true in the abstract, no doubt, but in the same manner that the abstract proposition is true that the existence of public-houses in the slums of London interferes with Christian effort there."

The Collector of Khandesh, also in the Bombay Presidency, who has served many years in that district, expresses his disbelief that the consumption of opium is having any bad effects on the people of agricultural districts. He writes:—

"Reading the extracts printed in the selections forwarded by the Government of India, it strikes me that the gentlemen who penned the highly coloured accounts of opium dens must have been shown the worst haunts in large towns, and that they and those who think with them inveigh against the use of opium much as teetotalers at home attack the use of spirits and beer and wine, because of the evils of the gin palaces of our great cities. I am not prepared to admit that the use of opium in moderation is more harmful than the use of whisky. Every one who has served in Gujarat must have seen many sturdy Rajputs who took their opium regularly and were none the worse for it."

Mr. Campbell, collector of Bombay, after quoting the accounts of opium dens given by the Anti-Opium Society, goes on to say:—

"In my judgment, the picture which these accounts give of the opium smokers is overdrawn and misleading. The statement that in Bombay houses children smoke, is supported by so much precision and detail as to make it difficult to suppose the writer was mistaken. At the same time, cases of allowing children to smoke must be extremely rare. I have never seen a child smoking, or who had smoked, or who was intended to smoke. I have never seen a child in a smoking house, except the child of one of the shopmen, who professed to be, and was, I believe, aghast at the idea of allowing his child to smoke. I have not heard, either from inspectors or smokers, of the case of a child being allowed to smoke; on the contrary, after special inquiry, the Chief Inspector assures me that such cases are unknown. As to the men smokers, and the effect of smoking on their character, appearance, and health, the descriptions under their review seems to me misleading. I have no fault to find with the general description of a Bombay chandul house, given at page 9 of the reprint:—'A dirty, dilapidated, nondescript shop, with its shutters up. . . . Raised platforms, with some hundred recumbent and semi-recumbent figures, all men, except three women and a few lads. . . . Groups of smokers, some half lying, half sitting, others curled up, or reclining at full length.' Except that, so far as I have seen or can learn, no youths under 11 attend these smoking-houses, this description seems to me accurate. The Poonah description is also moderate:—'A low-roofed room, with 25 to 30 persons, in groups of five or six round each lamp, most of them intent on their pipes, a few in a semi-conscious state.' On the other hand, I have seen nothing to justify the following passages:—'Human swine of both sexes . . . most immodest attitudes . . . handsome young women sprawling on the senseless bodies of men.' Such sights, I believe, are not to be found in Bombay smoking houses. In a room of 40 or 50 smokers all but three or four are awake. The bulk of them have done a hard day's work. They are tired and indolent. In opium-smoking houses assaults or acts of violence are almost unknown. Of the smokers very few are unable to answer questions clearly and readily. Even those asleep awake when lightly shaken. Even when suddenly aroused they can at once tell their name and calling. 'If you had to go out now and work, could you go?' Almost always the answer is 'Yes, we could.' Again, as to the effect of opium smoking on character. It is true a share of the smokers are beggars, and a share of them are bad characters. It is true the houses are watched by the police, for thieves meet in them and scheme crimes. Still, are all or nearly all the smokers ne'er-do-wells? Not nearly all. So far as I have seen, a Bombay opium-smoking house is much like Dr. Morison's description of a Bengal smoking house:—'Almost all the smokers are of the labouring classes, tailors, day labourers, and one or two shopkeepers. So far as I could judge by questioning the smokers in Bombay smoking houses, about two-thirds are regular working craftsmen and labourers.

I asked the assistant collector to frame a separate estimate. His estimate was:—‘At the fewest 70 per cent. regular craftsmen and labourers; at the most 20 per cent. beggars, and 10 per cent. bad characters.’ I made a further personal test in three houses taken at random. The result was:—In one house of 11 smokers all were craftsmen in regular work; in a second house of 25 smokers all were craftsmen in work; in a third house of 47 smokers one was a woman, nine were beggars, the rest were craftsmen and labourers. I have made the chief inspector take a similar test in 14 more houses. The result is, of 227 smokers 188 are workers, 38 are beggars, and one is a thief. It is probable that some among the workers are bad characters. Still care was taken to ascertain that in most cases the smokers are actually employed on the work they named. The estimate that two-thirds of the whole smokers are able to do, and do, regular work as labourers, weavers, embroiderers, sailors, drivers, cartmen, blacksmiths, mill hands, fitters, barbers, and also as small traders and shopkeepers, sellers of firewood, fish, tea, coffee, tobacco, and cloth seems well within the mark.

“Similarly, as regards the effect of the smoking on the health and the appearance of the smokers, the descriptions seem to me overdrawn and misleading. ‘Of horrible destructions of God’s image more terrible than delirium tremens, idiocy, or lunacy,’ I have seen none. Of the starved and emaciated shrivelled warnings I have seen surprisingly few. The bulk of the men, I should say over two-thirds, though smokers of 8, 12, 20, and in one case of 40 years’ standing, were in body and face to look at well nourished and healthy. To many of them I, in surprise, asked the question which Dr. Morison asked in Bengal:—‘You have smoked four or five years and are stout and strong. How is this?’ The explanation in Bombay is the same as the explanation in Bengal:—‘Smoking does not injure those who are well fed as it injures the starving. On the point of appearance and harm to health I checked my first impression by my assistant’s experience. His answer was:—‘Almost none, except the old and the beggars, not more than 10 per cent. in all are emaciated.’ I made a personal test in three houses. In one of 11 smokers all seemed healthy and well nourished; in a second of 25 smokers, one old man was emaciated; in a third of 47, though the beggars looked dissipated, none were notably withered or broken. In the 14 houses specially tested by the chief inspector, 10 were found emaciated or slightly withered. In almost every case the emaciated and withered were over 50 years of age. So far as I can judge, the assistant collector’s estimate is correct, that, except some of the old and some beggars, very few opium smokers are notably withered or emaciated.”

The whole of Mr. Campbell’s report deserves attentive perusal.

The last report I shall quote is that of the Commissioner in Sind. He says:—

“The society assumes that the consumption of opium, even in a moderate degree, is detrimental to man both physically and mentally. It is far from certain, however, that this assumption is correct, and we have the evidence afforded by whole tribes who have habitually, from generation to generation, taken opium. As instances may be taken the Rajputs and Bhils. Their energy, endurance, and bravery cannot be said to have been affected by their addiction to opium. Throughout the country one meets with people who take opium in moderation, and for much the same purpose and with much the same result as the English gentlemen of the present days takes his wine.”

Such is the evidence of persons who are in the best position to know the facts. I could add much more to the same effect. It completely establishes the contention that it is the abuse and not the use of opium which is harmful, that the moderate use is the rule, and that excess is the exception.

I now come to the proposals of the “Society for the Suppression of the Opium Trade,” as to the actual practical steps to be taken to arrive at their object. I find them in a pamphlet published by the Secretary of that Society in 1890. The first two and the fourth are thus stated:—

1. That the Bengal system of licensing the growth of the poppy and of manufacturing opium be at once stopped, except so far as may be needful for legitimate medical use.
2. That the necessary measures be at once taken, by raising the tax or otherwise, to prevent any extension of the cultivation of the poppy in Malwa, so as to compensate for the diminution of the supply from Bengal.

4. That the retail sale of opium throughout India be limited by measures having the same object as the provisions of the Pharmacy Act in Great Britain, namely, to restrict the sale to that which is required for medical use alone.

It will be observed that nothing is said of the poppy cultivation in the Punjab; perhaps the Society are not aware of its existence. I assume that they would propose to stop that also. Otherwise smuggling from that province would assume enormous dimensions. Then, I would ask, what is meant by “legitimate medical use?” When we find whole tribes of people, living in malarious and fever-stricken tracts, using the opium daily as a prophylactic, is that a legitimate medical use? Or is it intended that no one shall be permitted to purchase opium except under the written authority of a duly certificated member of the medical profession? How many of the opium consumers in India are within reach of an English doctor? Could you trust the native Baidas Hakims, and Pansaris, the doctors and druggists of the country, with this power? Anybody with any knowledge of India would laugh at such an idea. How then are you to meet this great practical difficulty?

It may be possible in British territory, by the exercise of despotic power, to prevent the poppy being grown, but what are “the necessary measures” so vaguely suggested for preventing its extension in the native States? Every tyro in Excise or Customs administration knows that the power to raise duties on an article in large demand is limited by the means of preventing its illicit production and sale, and that if you increase the profits of smuggling, you will proportionately have to increase your preventive measures. Unless British officers and establishments were appointed to overrun the native states, and to interfere with the agricultural operations of the people, the cessation of the growth of the poppy in British territory would infallibly lead to an enormous extension of the cultivation in native states. The export thence of opium could only be prevented by Customs barriers and patrols round Rajputana and Central India, involving a line between 2,000 and 3,000 miles in length, and heavy expenditure on the establishment. How would the native states concerned regard such measures? I have no hesitation in saying that the discontent occasioned not only in those states, but amongst our own people, including the Sikhs—from whom the flower of our native army is recruited—would constitute a very serious political danger.

I was myself in charge of a Customs’ line, 2,500 miles in length, the greater part of which was maintained to keep salt produced in native states from entering British territory without the payment of a heavy duty. I am well acquainted with the evils of that barbarous system, the destruction of which I was one of the first to advocate, and spared no efforts to accomplish. It was achieved by entering into treaties with the states possessing salt sources, under which British establishments are permitted to supervise their salt works, and tax the produce before it leaves them. But this could be accomplished only by paying the states concerned compensation, in the shape of lump sums of money and annual assignments, which are met from the taxation of the salt consumed by their people. But how are you to conciliate the native states for interference in their poppy cultivation? Will the people of India, or the people of this country, submit to be taxed in order to compensate these native states, and to reconcile their rulers to an army of British preventive officers scattered over their territories? And if you reconcile the rulers by paying them, how are you to conciliate their people, who have been accustomed for centuries to the unrestricted use of opium? Without such preventive measures British India will be supplied with the Malwa drug, which, from its great value in a small bulk, is comparatively easy to smuggle. And these preventive measures must be of the strictest kind, involving the searching of the persons and goods of all travellers, and domiciliary visits, to detect the carriage, and prevent the storing of the drug.

I now come to the third proposal of the Society for the Suppression of the Opium Trade. It is as follows:—

3. That the Chinese Government be approached with proposals for diminishing the export of Malwa opium, simultaneously with the suppression of the growth of the poppy throughout China.

I do not wish to use disrespectful language, but I can hardly speak of such a proposal with gravity. The Chinese Government, who have for centuries fulminated futile edicts, threatening the heaviest pains and penalties against the growth of the poppy and the use of opium, but whose officials have never had the will or the power to enforce them, and who are known to connive at the open and unconcealed infringement of the law, are to be "approached" by the British Government, with this request: "Now that we are doing our best to deprive you of Indian opium, which your people for centuries have demanded on account of its superior quality; now that we have, by our restrictive measures, encouraged the growth of the poppy in China, and the home production of an inferior article, to such an extent that whole provinces are covered with its cultivation; now that we are mulcting your import customs revenue of about 2,000,000 sterling a year; will you be good enough at once to stop the cultivation in China, and deprive your people of an article which we believe to be an unmitigated evil, although there is a large body of Englishmen who, from personal experience, have testified that it is harmless to the great mass, who are moderate consumers?" How would such a request be met? If the solemn and self-possessed Chinaman has any sense of humour, by inextinguishable laughter.

But why should our philanthropy stop here? I read a statement a short time ago in a paper called the "Foochow Echo," to the effect that some of the Chinese are planting poppy in the place of tea. If they meet with success, it is said others will follow their example and give up tea altogether. It is the competition of Indian tea in the markets of Europe which has lowered the profits on China tea. Let us trust that India will not be asked by the Anti-Opium Society to give up producing tea in order to prevent the Chinese turning their tea gardens into poppy fields. And what of the hypocrisy of a people who not only derive nearly half of their public revenue from the consumption of alcohol and tobacco, but support from this consumption an enormous commercial industry of brewers, distillers, hop and barley growers, merchants, importers, agents, and vendors, what of their hypocrisy in asking India and China to forego the profit derived from the opium trade?

I am aware that many of the opponents of opium would also prohibit the use of alcoholic drinks in the United Kingdom, but before "approaching" China let the people of this country set the example and make the liquor traffic, except for purely medicinal purposes, illegal; let them forbid by law the cultivation of the hop plant, and the growth of barley for distillation or malting; let them forbid the import of wine and spirits from the Continent of Europe and elsewhere, and then they will be in a position to "approach" China with a prayer for the destruction of the poppy cultivation and the trade in opium.

It has been suggested that if the culture of poppy were prohibited other crops would take its place and thus supply a great part of the loss. But would the farmers of Kent be satisfied if the temperance party were to say to them, "We will pass a law to prohibit your cultivating hops. You can, however, grow potatoes or gooseberries instead?"

It is true that a more moderate party in this country does not go the length of prohibiting the cultivation of the poppy and the manufacture of opium in Bengal. They are shocked at the direct management by the Government of these industries. No question has been more fully discussed in India than this, there are volumes of correspondence relating to it, but the upshot of all these discussions has invariably been the recognition of the fact that, under any other system, the cultivation could not be so well restricted, that smuggling would be more rife, that the cultivators would be more rife, that the cultivators would be brought under influences of speculators, from which they are at present guarded, and that whatever evils now exist would be largely increased. The Society for the Suppression of the Opium Trade recognise this, and in the pamphlet I have quoted declare that the proposal is entirely inadequate, and that their demand is nothing short of absolute prohibition.

India has had the advantage of drawing from England, for more than 100 years, a number of upright, honest, and able administrators. It is remarkable that there is not a single instance of an Englishman who has been directly responsible for the well-being of India, and who has had an important voice in its administra-

tion, who has ever suggested the prohibition of the cultivation of the poppy. That has been left for a party of irresponsible persons in this country, whose want of knowledge is patent to everyone who has studied the question on the spot.

I will give one recent and striking instance. There is internal evidence that no one who joined in the memorial of the Society for the Suppression of the Opium Trade, of the 30th July 1890, which is published in the recent Blue Book on the consumption of opium in India, had the most elementary knowledge of India, or if there were such a person he could not have read the memorial. In it Lucknow is described as being in the Punjab, and Lahore as being in the North-Western Provinces! This blunder is as stupendous as would be that of persons memorialising for the suppression of alcohol in Europe, who should place Paris in Scotland and Dublin in Holland.

There have just come into my hands two articles from native newspapers, published, one in Calcutta, the other in Bombay. The Calcutta paper is called "Bengavasi." It has the largest circulation of any of the Bengal papers, being about 20,000. The following is a translation of an article which appeared in that paper on the 30th January last:—

"What harm does Government's opium business do to us? Does Government press us to eat the drug? Or is it that the sight of an opium shop creates such a craving for the article that one cannot help eating it? Now, the opium shops, as such, possess no attractions for the people, their existence merely making it easy for habitual opium eaters to buy it for their use. We believe that most of those who use opium suffer from some disease, and use it medicinally. Opium is a medicine in gout and in all diseases of the bowels and kidneys. That opium used in old age prolongs life is also a common belief. For all these reasons many people use the drug in large or small doses, and gradually become confirmed opium-eaters. It is not the sight or appearance of the opium shops, which by the way is the most revolting possible, that attracts men thereto. Nor is it the case that men eat opium for the purpose of showing their loyalty to Government, which trades in that article. Nor, again, do people go to the opium shops from the consideration that by buying opium they would help to rescue Government from its financial embarrassment. Habitual opium-eaters can do without their daily bread rather than forego their regulation dose of the drug. Again opium is largely used as a medicine in all systems of the medical treatment—allopathic, homeopathic, ayurvedik. People resort to the opium shops for all these purposes, and not a man is attracted to them by their mere appearance, as is the case with liquor shops. An opium shop has nothing of the wine shop's attractive glitter of glass and beauty of label. Nor does a dose of opium produce that exhilaration of spirits which makes the wine-bibber sing and dance in joy. What attractions then does an opium shop possess for the public? We do not really see that an opium shop licensed by Government can hold out any temptations to men. Its appearance is rather calculated to repel men from it. If it had been otherwise, if the mere sight of an opium shop had been enough to attract customers, we would have freely condemned the opium business of the Government.

"A person under the influence of opium does not become querulous or boisterous. Nor does a habitual opium eater bring beggary and destitution upon himself and family, and die an untimely death. The number of untimely deaths among opium eaters is very few. If it had been otherwise, we should have been the first to condemn the opium trade, and ask Government to discontinue the sinful business.

"It is true that opium is used for committing suicide. But those that will commit suicide will commit it even if they do not get opium for the purpose. Government does not trade in arsenic or ropes, and yet many people put an end to their lives by swallowing the former or drawing the latter round their necks. If Government discontinues its opium business, others will take it up, and there will still be cases of suicide from opium poisoning. We are, therefore, really unable to understand what harm is done by the Government's trade in raw opium.

"These remarks apply in some measure to the different preparations of opium, and particularly to guli. The guli shops present a most repulsive appearance. As it is, however, desirable on various grounds that such shops should cease to exist, the writer would not object to Government's directing their abolition.

"What good will the changes now proposed to be made in connexion with Government's opium business do to the country? And is it possible to do the amount of good that is expected? We do not see that the Government's opium business does any harm to anybody. Opium cultivation will not cease even if Government gives up the business. Nor is it desired that that cultivation should cease. Now, suppose Government gives up the business, and somebody finds himself at liberty to grow and sell and purchase opium. Suppose the opium shops, flourishing as before, with this difference only, that the signboards put up in front of the shops no longer contain the words 'By order of Government.' The accounts are made up, and they disclose a large deficit in the finances. Government, however, must meet its regular expenditure, and that means that the people must raise the money from other sources. It is thus clear that the people will gain nothing by the abolition of the Government's trade in opium."

The "Bombay Samachar," a Guzerati paper, which has the largest daily circulation in Bombay, has the following article on the 19th February last:—

"The opium agitators in England seem to be insensible to the great pecuniary loss that would be inflicted on the people of India by a prohibition against the production of opium in India and its export to China. To the ranks of the opium agitators in England an addition has now been made in the person of Miss Sundrábái Powár, an Indian lady. In an address recently delivered by her at Sheffield, Miss Powár asserted that the use of opium had created great mischief in India, and that as she could not quietly bear this sight she had gone to England to plead for the abolition of the opium monopoly. It is not known in Bombay who Miss Powár is, and what she did while she was in India to stop the alleged evil effects of the consumption of this drug. Miss Powár accuses the Government of India of having encouraged the opium trade in the interests of revenue, but no mischief whatever, we assert, has been created in India by the consumption of opium. On the other hand, considerable evil has been caused by a free use of country and European spirits, particularly among the educated persons, and the Government of India is very particular about increasing its revenue from this source. Miss Powár ought to bear in mind that there is more need for checking the consumption of spirituous drinks than the use of opium."

Mr. Samuel Laing, when Finance Minister of India in 1862, made the following remarks:—

"This much seems certain in speculating on the probable continuance of a demand for opium in China. Every civilised or semi-civilised race of mankind seems to affect some peculiar form of nervous stimulant, and as the natives of Northern Europe take to alcohol, so the Chinese take to opium. Possibly, in each case, the craving is for something to supply an innate want. The Englishman, the Dane, the German, and the Russian resort to that the specific effect of which is to raise the spirits and produce temporary exhilaration. The Chinese, whose greatest deficiency, as shown by the whole history, religion, and literature of the race, is in the imaginative faculties, resorts to that which stimulates the imagination, and makes his sluggish brain see visions and dream dreams. Be this as it may, the fact is certain that, under all circumstances and in all climates, as the Englishman is a drinker of beer, so is the Chinaman a smoker of opium." We have, at the bottom of our opium revenue, one of the great natural instincts of a large population, upon which English Chancellors of the Exchequer confidently rely for half their revenue."

I have not dealt with the comparative physiological effects produced by the use of alcohol and opium, and other drugs; but I hope some of the more scientific gentlemen here, this evening will speak on this point. From all I have learnt on the subject, I believe that the excess of the use of alcohol is far more destructive to the human frame than that of opium, for one attacks the tissues and the other produces only functional derangement. If the people of India are deprived of opium, the consumers of it, it will infallibly have recourse to alcohol or to hemp, which grows wild in many parts of the country, and the effects of which are, when taken in excess, maddening.

Indeed much of the evil character which is given to opium is due to its being frequently adulterated with or used with hemp. The *hashish*, from which the English word "assassin" is derived, and the *bang*, which is notoriously the stimulant used by fanatics in

India when intent on reckless slaughter, are nothing but hemp. It would be beyond the power even of Parliament to eradicate hemp from India.

From the mass of evidence to be found in the writings of members of the medical profession who have acquired their experience amongst the people who use opium as a stimulant, I will quote a few passages.

Dr. W. B. O'Shaughnessy, in the "Bengal Dispensary," 1841, writes:—

"The longevity of opium eaters is, in many parts of the East, of proverbial notoriety. . . . When the habit is but moderately followed, it appears to occasion no greater evil than the proportionate indulgence in wine or other spirituous liquors."

Dr. D. McPherson, in his book on "The War in China," 1843, has the following passage:—

"From the earliest periods in every nation, and among every people, we find some description of stimulus in common use among them; and were we to be led away by the popular opinion that the habitual use of opium injures the health and shortens life, we should expect to find the Chinese a shrivelled, and emaciated, and idiotic race. On the contrary, although the habit of opium smoking is universal amongst the rich and poor, we find them to be a powerful, muscular, and athletic people, and the lower orders more intelligent and far superior in mental acquirements to those of corresponding rank in our own country. The Chinese themselves affirm that the use of the drug acts as a preventive against disease, and, in this opinion, when smoked in moderation, I am inclined in part to agree with him. The particles, by their direct and topical influence on the nerves of the lungs, which carry the impressions they receive to the heart, brain, and spinal cord, and through them to all parts of the body, may thus, to a certain extent, guard the system against disease, and, by its tonic influence, strengthen the several organs. This opinion gains strength, when we call to mind that a peculiar active principle in opium—the narcotine—has of late been employed, with considerable success, in Bengal, as a substitute for quinine. It may also be mentioned that, at the time fevers prevailed so extensively among our troops at Hong-Kong, but comparatively few of the Chinese suffered, though exposed throughout to the same exciting causes."

Dr. Cornish, Sanitary Commissioner for Madras, drew the attention of the Government to the great consumption of opium in the Godavery district. An investigation was ordered, and the officer who reported on it, in 1874, came to the following conclusion:—

"I believe that the extensive use of opium in this district is due to the extensive prevalence of fever, and that if fever could be checked, so would the use of the drug. Conversely, I think it unadvisable to attempt arbitrarily to stop its consumption at present."

Dr. Vincent Richards, who was in medical charge of Balasor, in Orissa, where opium eating is very common, made very careful inquiries into the matter, and collected elaborate statistics connected with it. He wrote, in 1877:—

"I estimated that about one in every twelve or fourteen of the adult population used the drug, and I believe the habit is somewhat increasing. The greatly increased consumption of the drug dates from the famine year 1866, when it was, if I remember rightly, nearly trebled; since when it has, I believe, pretty steadily increased. This is not the result of a growing abuse of the drug by individual consumers, but of a more extended use of it amongst the general population. There can be no doubt that opium eating was greatly resorted to in the famine year, because it mitigated the sufferings arising from hunger and sickness, and enabled the poor people to live on less food. . . . Opium eating—at any rate at Balasor—does not conduce to either crime or insanity, since the inhabitants are a particularly law-abiding race, and the insanies are only '0069 per cent. of the population."

The general conclusions I arrive at are,—1st, that opium is taken habitually by about 2 to 10 per cent. of the adult population of Balasor, and that the average daily allowance for a man is 7 grains, and for a woman 5 grains; 2nd, that moderation is the rule; 3rd, that moderate doses include from 2 to 16 grains *per diem*, according to circumstances; 4th, that opium eating is much more common in unhealthy localities than in healthy ones, even though they are situated in the same district; 5th, that the drug may be, and is sometimes, taken in very large doses—30 grains and upwards—without producing any very serious ill-effect, much depending on the constitution of the individual,

and his habituation to its use; 6th, that whatever the effects of the excessive use of the drug may be, when taken in moderation, it is positively beneficial, where such diseases as fever, elephantiasis, rheumatism, &c., are prevalent, and when food is scarce; 7th, that the effects of even the excessive use of opium are harmless, both to the individual and to society, compared with those of the excessive use of alcohol."

The views of Sir William J. Moore, who had an extended experience in Rajputana, and was afterwards Surgeon-General with the Government of Bombay, are well known, and I hope that he will again state them on this occasion. They fully accord with those I have already quoted. There are literally volumes of evidence of a similar character.

We have, then, a great consensus of opinion arrived at by a number of independent persons of high character and reputation; gentlemen of ability and integrity, who have attained to responsible positions, in which they have had the best opportunities of ascertaining the truth; whose duty it has been to state the truth; and who have had no personal interest in perverting it. They deliberately declare that the daily use of opium in moderation is not only harmless, but of positive benefit, and frequently even a necessity of life; that this moderate use is the rule, and that excess is the exception. On the other hand, we are told by a society, chiefly consisting of Englishmen who have no personal knowledge of the facts, that all this evidence goes for nothing, and that the use of opium, except for strictly medicinal purposes, is an unmitigated evil, and ruins everyone who habitually has resort to it. If we accept this view, which differentiates opium from every other stimulant used by great masses of people, we must believe that all those experienced persons who have testified to the direct contrary are either grossly incapable or grossly dishonest. It is no use mincing words; a man must be one or the other who, having lived for years amongst an opium-consuming people, and having made a careful study of the effects of the habit, deliberately declares as the result of his inquiries that which is untrue. And on what is the opposition based? Chiefly on the statements of English missionaries in China. I respect the sincerity and the high and noble purposes of these gentlemen, but as the French phrase it, they have the defects of their qualities. They are filled with a burning zeal to better the physical and spiritual condition of the poor and miserable Chinese with whom they are brought into contact. In the prosecution of the objects for which they are struggling, they find numerous instances of the

degradation which is produced by the abuse of opium. They are met by the astute Chinaman with the argument that opium is an evil thing, and that the English who import it into China are out of court when advocating morality. They fall into the trap, and jump to the conclusion that it is the opium trade which prevents their making faster progress in the evangelisation of China. Only one side of the question is brought prominently to their notice, and that the worst side. Their experience is almost entirely confined to towns on the sea coast. They knew little or nothing of the millions of the healthy, industrious population in the interior of the country to whom the use of opium is as common, as moderate, and as beneficial as that of beer is to the people of England.

In conclusion, I would say to the Society for the Suppression of the Opium Trade—You may make this a party question; you may win votes relying on the uninstructed philanthropy of your fellow countrymen; you may, through Parliament, use the despotic power of the British Government to destroy one of the most valuable products of India, and subject the people to new taxation in order to supply the loss of revenue now paid chiefly by the Chinese; you may deprive hundreds of thousands of Her Majesty's Indian subjects of a prophylactic which enables them to resist fatigue, to sustain privation, and to save life; you may thereby increase suffering, sickness, and mortality; you may cover India with an army of preventive officers to watch another army of smugglers, created to satisfy a natural demand of which you have suppressed the legitimate supply; you may harass the people by personal searches and domiciliary visits; you may thus create discontent amongst our native subjects, and disaffection in the best forces of our native army; you may, by unwarranted and unprecedented interference in their internal administration, and, owing to the pecuniary losses both rulers and subjects will sustain, disgust and alienate the native States of Central India and Rajputana, our bravest and most loyal allies; you may drive the consumers of opium to alcohol and hemp; you may do all this, but you will never persuade the Chinese to follow in your footsteps, and abandon the ever-increasing culture of the poppy. In short, you may inflict on India a cruel injury, the extent and the consequences of which you are incapable of calculating; but you will fail in any way to benefit China, unless you count it a benefit greatly to extend the cultivation of the poppy, and the manufacture of opium within her borders.

APPENDIX II.

HISTORICAL NOTE ON OPIUM and the POPPY in CHINA.—By DR. EDKINS, of the Chinese Customs Service.

Shanghai, May 1889.

[This paper was cited by witnesses before the Commission; it is now out of print and unobtainable. The Commission therefore ordered it to be reprinted as an Appendix to the China evidence.]

TABLE OF CONTENTS.

	Page
Introduction	147
The poppy among the Greeks and Romans	147
The poppy among the Arabs	147
The Arabs in China	148
The Arabs at Canton	148
First mention of cultivation of the poppy in China in the eighth century	148
Second mention of cultivation of the poppy in China in the eighth century	148
Early poem on the poppy	148
The two Arab travellers	148
The poppy enters the Chinese <i>Pharmacopœia</i>	148

	Page
Poem of Su Tung-p'o	148
Poem of Su Chê	148
Notes on Su Chê's poem	148
<i>Materia Medica</i> of the eleventh century by Su Sung	148
Cultivation of the poppy mentioned	149
Medical use of poppy seeds	149
The white variety of <i>Papaver somniferum</i>	149
Twelfth century use of seeds to counteract the effects of mercury	149
First use of capsules in twelfth century	149
Another poem on the poppy	149
Use of capsules in dysentery shown by extracts from three authors	149
Use of capsules probably derived from the West, but this is still not proved	149
Use of capsules in North China in twelfth century	149
Use of capsules in North China in thirteenth century	149
Use of capsules in South China in thirteenth century	149
The capsule "kills like a knife"	150
Use of capsules in fourteenth century	150

	Page		Page
First mention of opium extract was in fifteenth century -	150	KÄMPFER'S <i>Amcenitates exoticae</i> -	153
Arabian method of obtaining opium -	150	Tobacco : KÄMPFER'S account -	153
WANG Hsi's directions for use of opium -	150	Hookah or water pipe -	154
WANG Hsi's directions for procuring opium from the poppy -	150	Summary of KÄMPFER'S account -	154
WANG Hsi's knowledge, how acquired -	150	Object of the water pipe -	154
Fullest details, where found -	150	Cigars -	154
Mode of preparing opium in the sixteenth century -	150	How opium is made in Persia -	154
Medical use of opium in the sixteenth century -	151	Preparation of opium -	154
Prohibition of foreign trade encouraged Native production -	151	KÄMPFER'S visit to Java in 1688 -	155
KUNG YÜN-LIN'S prescription -	151	Mention of use of opium -	155
Medical use of poppy bracts of red and white varieties of <i>Papaver somniferum</i> -	151	First opium-smoking shops -	155
Golden elixir pill -	151	Medical use of opium in 1723 -	155
Native account of foreign trade before the prohibition -	151	Early opium-smoking in Formosa -	155
Bad effects of prohibition -	151	Opium-smoking came to Formosa from Java -	155
Good effects of permission to trade -	151	Another account of early opium-smoking in Formosa -	155
Duties levied -	151	Prohibitory edict of 1729 -	156
Tariff of A.D. 1589 -	151	Spread of opium-smoking in the eighteenth century -	156
Tariff of A.D. 1615 -	151	Native opium in Yünnan -	156
LI SHIH-CHÊN'S <i>Materia Medica</i> -	151	Who cultivated the poppy in Yünnan? -	156
Poppy as a flower -	152	Use of capsules in 1742 -	156
Another account of the mode of obtaining opium from the poppy -	152	Present use of capsules -	157
<i>Résumé</i> -	152	<i>Hoppe</i> Book of 1753 -	157
Opium in Java in 1629 -	152	Five kinds of duties in 1753 -	157
BONTIUS' opinion of opium -	152	The three tariff books -	157
Opium-smoking arose from tobacco-smoking -	153	Prices ruling in 1755 -	157
Tobacco-smoking, when introduced -	153	Opium-smuggling in 1782 -	157
Prohibition of tobacco-smoking -	153	Opium-smoking in 1793 -	157
Manchu prohibition of tobacco-smoking -	153	Opium-smoking in 1800 -	157
Spread of tobacco-smoking -	153	Statements in <i>Hai-kwo-t'u-chih</i> -	157
Opium-smoking in Formosa -	153	Local arrangement in 1822 -	157
		Native testimony on the deleterious effect of opium -	158
		Statistics of the present Native production -	158
		Concluding note -	158

INTRODUCTION.

This Historical Note on Opium in China, which has been prepared by Dr. Edkins, of the Chinese Customs Service, is published by order of the Inspector General of Customs.

E. MCKEAN,
Statistical Secretary.

Inspectorate General of Customs,
Statistical Department,
Shanghai, May 1889.

OPIMUM: HISTORICAL NOTE, OR THE POPPY IN CHINA.

1°.

That the poppy was cultivated very early in Italy is clear from a passage in Cornelius Nepos, who, in his account of Tarquin, mentions it in a way to show that in the time of the last of the Roman Kings it was commonly sown in gardens. Tarquin's son was in a city of Etruria, devising means to betray it to his father without himself losing the confidence of the people, who believed father and son to be in a state of hopeless alienation, he having come to their city with wounds on his body, which he said had been inflicted by his father as a punishment. He sent a messenger to his father for advice. The father* took the envoy into his garden and struck down all the tallest poppies. Sextus Tarquinius knew what this meant, and by procuring the death or removal from the city of all the chief inhabitants, succeeded in persuading the remainder to submit to his father's rule.

The poppy is also alluded to in Homer as a garden flower. He describes an arrow aimed at Hector as missing him, but striking in the chest another son of Priam. He proceeds, "Just as a poppy in a garden hangs " on one side, its head laden with fruit and with the " dew of spring, so he bent on one side his head, made " heavy by his helmet."† The first mention of poppy

juice is by Hippocrates, who calls it *ὀπός μήκωνος*. From *ὀπός*, "juice," was formed *ὀπιον* in Greek, and *Opium* in Latin. *Μήκων* is the Greek name of the poppy. Hippocrates lived in the fifth century before Christ. He was famous as the founder of Greek medical literature, and to him certainly the virtues of the poppy were known.

In Virgil we find the poppy described as pervaded by lethean sleep ("Lethæo perfusa papavera somno."—*Georg.*, i, 78), and he sometimes speaks of the "lethean poppy" or the "sleep-giving poppy" ("soporiferumque papaver."—*Æneid*, iv., 486). He borrowed from Greek mythology, according to which the waters of the river Lethe, which flows through the regions of the dead, cause those who drink of them to forget everything, as is said also to have been the case with the lotus-eaters of Homer. The poppy is in Virgil connected not only with the mythology of the world of the dead, but with the worship of Ceres. This goddess is represented as holding the poppy in her hands. Conjecture has been busy in attempting to account for this, and it has been supposed that it was because the poppy grows wild in corn fields in European countries, or because the seeds of the white poppy were eaten as food to give an appetite, Ceres being thought of by the ancient mind as the bountiful giver of food. To the ancient imagination, however, it would be quite enough to think of the poppy as the prettiest of the flowers which grow up wild in the midst of wheat, and on this account to dedicate it to the service of the goddess of the wheat-field. When, in the first Christian century, Pliny wrote his "Natural History" (20, 18 (76), 199) and Dioscorides his "Materia Medica," the word "Opium" was already introduced, and the sleepy effects of it were everywhere known.

2°.

The Arabians of the Caliphate studied Greek medicine and practised it. Opium became well known among them by its Greek name, which took the form *afyûn*, through the Semitic habit of changing *p.* to *f.* In Persia it appeared with the same form (*afyûn*), interchanged with *abyûn* and *apyûn*, which latter became, as will be seen, the parent of the Chinese name *ya-pien*. Both the Arabs and the Persians had national names for the poppy: the Arab called it *khaskh-khaskh*, and the Persian *kôkênâr*. Hence we may gather that the poppy was anciently known as a garden flower as far eastward

The poppy among the Arabs.

* *Hic, nuntio, quin, credo, dubiæ fidei videbatur, nihil voce responsum est. Rex, velut deliberabundus, in hortum ædium transit, sequente nuntio filii: ibi, inambulans tacitus, summa papaverum capita dicitur baculo deussisse.*—Livy, i, 54.

† *μήκων δ' ὥς ἐτέρωθεν κάρη βάλεν, ἥτ' ἐνὶ κήφῃ, καρπὸν βρωμένην νοτρήει τε εἰαρνήσιν. δὲς ἐτέρωσ', ἤμυσε κάρη πῆλῃκι βαρυνθὲν.*—Iliad, viii, 306-8.

as Persia, while its medical applications were made by the Greeks.*

The Arabs
in China.

In the times of the Caliphs the Arabs began to visit China,† especially after the founding of Baghdad, A.D. 763, and became traders in drugs, precious stones, brocades, rose water, and such things. Previous to the T'ang dynasty the poppy was apparently unknown to the Chinese botanists and physicians, and when it was brought to them their attention was drawn to the form of the heads which enclosed the seeds, then used in making a soporiferous decoction according to the directions of the Arab doctors; consequently they invented names for it, based on the appearance of the poppy heads. The seeds looked like millet seeds, if not in colour, at least in shape, and therefore they called the heads *mi-nang*, "millet bags."

The Arabs
at Canton.

The early arrival of the Arabs by sea at Canton may be illustrated by the following extract from the "Pan-yü-hsien-chih":—"In the T'ang dynasty, on occasion of the opening of trade with foreign ships, the Mahommedan King Mahomet sent his mother's brother from Western countries to China to trade. He built a tomb and monastery, called respectively *Chien-kuang-t'a* and *Huaishêng-ssü*. Soon after the monastery was completed he died, and was buried in the tomb [still existing outside the North Gate], in accordance with his intention."

3°.

First
mention of
cultivation
of the poppy
in China in
the eighth
century.

In the reign of T'ang Ming Huang, in the first half of the eighth century, an author named Chên Ts'ang-ch'î, in a work which he calls "A Supplement to the Pên-ts'ao," quotes from an earlier writer, Sung Yang-tzu, a statement that "The poppy has four petals. It is white and red. Above them is a pale red rim. The seeds are in a bag, which is like one of those arrow-heads which have air-holes to make a sound as the arrow cuts through the air. Within there are seeds like those of millet."

At this time, early in the eighth century, the Arabs had been trading with China for at least a century, for Mahomet's death occurred A.D. 632, and that of his uncle not long afterwards. It was easy for the poppy to be cultivated with the jasmine and the rose everywhere throughout the country. We know, indeed, from the "Nan-fang-ts'ao-mu-chuang," a work which dates from the beginning of the fourth century, that the jasmine and the henna, plants which must have come with the Arabian commerce, were already in China when that book was written. But the first distinct mention of the poppy is in the work of Chên Ts'ang-ch'î.

Second
mention.

In the work on trees, called "Chung-shu-shu," written by Kuo T'o-t'o, it is said that "The poppy, *ying-su*, if sown on the 9th of the 9th month or on the 15th of the 8th month, the flowers will be large and the heads full of seeds." This passage occurs in the "T'u-shu-chi-ch'êng."‡ The author's biography was written by Liu Tsung-yüan, and we therefore know that he was living in the later part of the eighth century. He resided near the capital, in Shensi. From this it must be concluded that the poppy was then cultivated in the neighbourhood of what is now Si-an-fu (provincial capital of Shensi).

Early poem
on the
poppy.

The poet Yung T'ao, a native of Ch'êng-tu-fu, in Szechwan, in the closing years of the Tang dynasty, wrote a poem, entitled "A poem on leaving a winding Valley and approaching my Western Home." It says "Passing the dangerous staircase I issued from the winding defile of the Pao Valley. After travelling across all the intervening plains and rivers I am now near my home. The sadness of the traveller in his journey of 10,000 li is to-day dissipated. Before my horse I see the *mi-nang* flower." This short poem shows that at the time when it was written the poppy was cultivated near Ch'êng-tu-fu.

4°.

From about 756 to 960, a space of two centuries, little is said in Chinese books of the Arabs; yet at that time two Mahommedan travellers came to China and wrote accounts of what they saw and heard. Recently their works have been translated into European languages. This shows that the Arabs did not cease during this interval to visit China. Information in regard to the medical qualities of the poppy would be originally furnished to the Chinese by the Arabs; it is on this account that in the *Pên-ts'ao* of the K'ai Pao period (A.D. 963 to 976) the poppy is introduced as a healing plant.

The two
Arab travel-
lers.

5°.

In the year 973 the Emperor Sung T'ai-tsu gave an order that Liu Han, and a Taoist, Ma Chih, with others, nine in all, should prepare the medical work known as "K'ai-pao-pên-ts'ao." In this the poppy is called *ying-tzu-su*, and it is stated that "Its seeds have healing powers. When men have been taking the stone that confers immortality, feel it powerfully operating, and cannot eat with appetite, they may be benefited by mixing these seeds with bamboo juice boiled into gruel and taking this."

The poppy
enters the
Chinese
Pharma-
copœia.

The name *ying-su* here used, and previously by the earliest T'ang dynasty authors on this point, means "jar millet," from the resemblance of the poppy head to the kind of jar which the Chinese call *ying*.

Among the poets of this period were two brothers named Su; one was the celebrated Su Tung-p'o. In a poem of his occurs the following passage: "The Taoist advises you strongly to partake of the drink called *chi-su-shui*. The boy may prepare for you the broth of the *ying-su*."

Poem of
Su Tung-p'o.

The brother, named Su Chê, wrote a poem which he called "A Poem on the Cultivation of the Medical Plant (*Ying-su*), or Poppy":—

Poem of Su
Chê.

"I built a house on the west of the city. The ground in the centre was laid out in rectangular divisions. Where the windows and doors left a space, firs and bamboos helped to fill up the vacancy. The thorny bushes were pulled up, and a garden made to grow good vegetables and other plants. The gardener came to me to say, 'The *ying-su* (poppy) is a good plant to have.' It is called *ying* because, though small, it is shaped like a *ying* (jar); it is called *su* because the seeds are small and look like *su* (millet). It is sown with wheat and ripens with panicle millet—*chi* (*Panicum miliaceum*); when growing it may be eaten like the vegetables of spring. Its seeds are like autumn millet. When ground they yield a sap like cows' milk; when boiled they become a drink fit for Buddha. Old men whose powers have decayed, who have little appetite, who when they eat meat cannot digest it, and when they eat vegetables cannot distinguish their flavour, should take this drink. Use a willow mallet and a stone basin to beat it. Boil it in water that has been sweetened with honey. It does good to the mouth and to the throat. It restores tranquillity to the lungs and nourishes the stomach. For three years the door has been closed, and I have gone nowhere and come back from nowhere. I see here the Hermit of the Shade (a Taoist priest) and the long-robed Buddhist priest; when they sit opposite I forget to speak. Then I have but to drink a cup of this poppy-seed decoction. I laugh, I am happy, I have come to Ying-ch'uan, and am wandering on the banks of its river. I seem to be climbing the slopes of the Lu Mountain in the far west."

There is a small river in the province of Anhwei which is called Ying-shui. The city mentioned was on the banks of that river, which is famous in history. The mountain called Lu-shan is in Western China, on the north of the celebrated O-mei-shan. The poet went to live at Ying-ch'uan when he was old. As a boy he had lived with his brother near the Lu Mountain.

Notes on the
poem.

6°.

The Emperor Jên Tsung, of the Sung dynasty, about the year 1057, ordered the compilation by Su Sung and others of the work known as "T'u-ching-pên-ts'ao." The magistrates of all cities were ordered to supply information on all medical plants in their vicinity, according to the method before employed in preparing the previous work, called "Ying-kung T'ang Pên-ts'ao," made in pursuance of an order given by the Emperor Kao Tsung, in the T'ang dynasty, to the Prince named

"Materia
Medica" of
the
eleventh
century by
Su Sung.

* Opium is also mentioned in the Jerusalem "Talmud" (seventh century), Aboda Zarah. ii. 40 (*ophyon*) as being a dangerous medicine.

† China in the early Han dynasty opened foreign trade by way of Cochin China. Under the Wei dynasty international trade was established at certain points on the border between North and South China. In the Sung dynasty, A.D. 971, a superintendent was appointed at Canton, Hangchow, and Ningpo, to overlook foreign trade. Earlier than this we read of an officer called Shih-po-ssü, appointed to Canton to superintend foreign trade, as the title implies. This was in the T'ang dynasty.

‡ Kindly lent from the Russian Legation Library, Pekin.

§ This statement shows that at that time there prevailed an extensive use of mercury, taken under the idea that it would prolong life, and that the effects were found to be very injurious.

Cultivation of the poppy mentioned.

Ying Kuo-kung. In this work it is said by Su Sung that "The poppy is found everywhere. Many persons cultivate it as an ornamental flower. There are two kinds, one with red flowers and another with white. It has an odour not very agreeable. The fruit is like a flower vase, and contains very small seeds. Gardeners manure the land for the poppy every other year. The seeds are sown in the 9th month. In the spring they are, if thus manured, seen growing with great vigour; otherwise they will not thrive, and if they grow at all they are weak and slender. When the capsules have become dry and yellow they may be plucked."

Medical use of poppy seeds.

He also says that "In cases of nausea and vomiting a drink made from poppy seeds in the following manner will be found serviceable. Three-tenths of a pint of the seeds of the white poppy, three-tenths of an ounce of powdered ginseng, with a piece 5 inches in length of the tuber of the Chinese yam, are to be cut and ground fine. Boil it, adding $2\frac{3}{10}$ pints of water. Take of this six-tenths of a pint, and add to it a little syrup of raw ginger with fine salt. It should be mixed well and distributed into doses, which may be taken early or late, and no harm will follow from taking other kinds of medicine at the same time."

The biography of this writer in the "History of the Sung Dynasty" says of him that he was a man of large mind, who would not take part in quarrels. He held to the rules of politeness and the laws of the State. Though high in station he lived like a poor man. From the invention of writing downwards, whatever there was to read and to learn in classics, histories, and the works of various authors, together with diviners' books, the 12 musical tubes, astronomy, astrology, mathematics, and medical botany, there was nothing with which he was not familiar.

The white variety of *Papaver somniferum*.

In regard to what kind of poppy is meant by Su Sung, writing in the 11th century, it may be well to refer here to the statement made by the German traveller Kämpfer, who towards the end of the 17th century was attached as physician to the Embassy sent to Persia by the King of Sweden. He says that the poppy from which opium was then manufactured in that country was the white poppy. It becomes plain, then, that in the time of Su Sung, though the name of opium had not yet appeared in books, yet the plant that was able to produce it was commonly known. The celebrated English botanist, Lindley, says that the poppies from which opium is made are those with red and those with white flowers.

7°.

Twelfth century use of seeds to counteract the effects of mercury.

At the beginning of the 12th century, in the reign of Hui Tsung, one of the Court physicians, named K'ou Tsung-shih, compiled a work called "Pên-ts'ao-yen-i." In it he says that the flowers of the poppy are in some kinds extremely abundant in their leaves, and that the number of seeds in the heads is beyond computation. "They are in size like those of the *ting-li*,* and white in colour. The seeds are cooling in their nature; if taken in good quantity they are beneficial for such affections as diarrhoea, and act favourably on the bladder. Those who have been taking cinnabar, if they have them ground and boiled with water, adding honey, and prepared in the form of broth, will find them beneficial in a high degree."

First use of capsules in twelfth century.

In the botanical section of the *T'u-shu-chi-ch'êng* the following extract is found, taken from the work "Shan-chia-ch'ing-kung," by a Sung dynasty medical writer named Lin Hung, who, from his language implying the use of the capsules of the poppy with the seeds, we must suppose to have belonged to the Southern Sung. He is speaking of what he calls poppy-milk fish, by which is meant the juice hardened into cakes and taking the shape of fish. "Take poppy-heads, wash them well, and grind out their juice. First place some meal in a jar, covering the bottom. By means of a gauze bag filter the poppy milk upon it, removing the portion that floats above and allowing the thicker part to remain. Place it in an iron pan and let it boil for a little. Sprinkle rapidly some weak vinegar on it, and take it up from the pan into the bag and press it into a cake. It should then be placed in such a covered pan as is used for steaming

* This plant is stated by Williams to be crumferous, and like the mustard in shape and leaves. See the drawing in the Pên-ts'ao which says it is used as a light aperient.

macaroni and the like, and there be well steamed. It is then to be sprinkled with a solution of red leaven, steamed again for a short time, taken out, and made up in cakes shaped like fish."

A poem of Hsieh K'o, written in the Sung dynasty, is found in the work known as "Kuang-ch'ün-fang-p'u." "There seem to be tiny spots of ointment of lead on the tips of the flowers. It is as if they told me that the spring is advancing, but the snow is not yet melted. I see a thousand poppy heads full of black seeds. The east wind will blow and they will be like millet of the best size and quality." The comparison with snow indicates the colour of the poppies.

Another in on the poppy.

Yang Shih-ying, a native of Fuhkien when the Sung dynasty was closing, says in a medical work, while speaking of the use of the poppy capsule in medicine, in cases of dysentery, "This is thought little of by most, but when dysentery is of long continuance, without gatherings of matter locally and pain resulting, and it is right to use astringents, if this remedy were not hand how could use be made of this mode of treatment? But there ought to be other drugs accompanying it, to modify the effect."

Use of capsules in dysentery shown by extracts from three authors.

Another Sung dynasty writer on medicine, named Wang Ch'iu, in a work to which he gave the name "Pai-i-hsüan-fang," writes that poppy seeds and capsules may with advantage be used together for both kinds of dysentery. The seeds are prepared in a pan over the fire. The capsules are roasted on a gridiron. After being pulverised they are made up into pills, with honey, of the size of *wu-tung* seeds (*Elaeococca verrucosa*). Thirty pills are taken at a time, with rice gruel. These pills have been tried and found most efficient.

Another Sung dynasty author, Wang Shih, in his work "I-chien-fang" says, "The effect of the poppy capsule in curing dysentery is nothing less than magical. But in its nature it is extremely astringent, and easily causes vomiting and difficulty in digesting food; consequently, patients are afraid of it and do not venture to take it. Yet if it be prepared over the fire with a little vinegar, and black plums be added on account of their acid qualities, its use will be found satisfactory."

"If the four drugs known as the four noble medicines, viz., *tang-shên* (a coarse ginseng grown in China), *pai-shu* (*Atractylodes alba*, a medicinal plant like an artichoke), China-root, and liquorice, be mixed in due proportion and taken with it, there will be still less tendency to check digestion and prevent the food from proceeding on its way. The results will be most excellent."

8°.

Li Shih-chên, in the "Pên-ts'ao-kang-mu, or Chinese Materia Medica," follows a chronological order in his arrangement of passages taken from the works of the medical authors who preceded him. It may be concluded, therefore, that the use of the poppy capsule in medicine began with the Southern Sung dynasty, that is, in the latter part of the twelfth or in the thirteenth century. Yang Shih-ying published his work A.D. 1265, and Wang Shih is by Li Shih-chên placed later. The latter does not say whence the use of the capsule was derived; it may therefore be supposed that it was introduced from the West, where its healing virtues were known from the most ancient times.

Use of capsules probably derived from the West, but this is still not proved.

9°.

In the work called "Hsüan-ming-fang, by Liu Hsien, of the Chin dynasty, it is said that for asthmatic cough, with perspiration, in summer and winter of several years' standing, the poppy capsule may be used. $2\frac{1}{2}$ ounces in weight should be taken. The stem and outer membrane should be removed. Let it simmer in vinegar. Take one ounce and mix with half an ounce of black plums; let it be slowly heated and then pulverised. Take for a dose two-tenths of an ounce. Let it be administered in hot water and drunk at bed-time.

Use of capsules in North China in twelfth century.

Li Kao, a physician of the same period (born A.D. 1180, died 1252), says the poppy capsule is efficient as an astringent and in strengthening the system. It operates on the kidneys, and is useful in the cure of disease affecting the bones.

Use of capsules in North China in thirteenth century.

10°.

Wei I-lin, of the Yüan dynasty, a native of Kiangsi and of the city of Chien-chang, published a book called "Tê-hsiao-fang," made up of prescriptions collected by

Use in South China in thirteenth century.

himself and his ancestors for four generations before his time. He says that in cases of obstinate diarrhoea of a chronic nature the poppy capsule may be used. The stringy parts should be removed, and it should be dipped in honey and held over the fire. Then pulverise it. As a dose use half an ounce. Take it with honey and hot water. These capsules have the power to strengthen the constitution. The effect is immediate.

The capsule "kills like a knife."

In the Yüan dynasty the next name is that of Chu Chên-hêng.* He says that "The poppy capsule is used extensively for cough at the present time in the case of those who are weak and consumptive. It is employed to take away the cough. It is used also for diarrhoea and dysentery accompanied with local inflammation. Though its effects are quick, great care must be taken in using it, because it kills like a knife. He also says, "Many persons to cure cough employ the poppy capsule, and it may be used without fear, but in the first place the root of the disease must be removed, while this should be reserved as a restorative method to complete the cure. In treating dysentery the same is true. Unnatural symptoms have to be expelled and lumps removed. It would not be right to employ at once such medicines as the capsule and *lung-ku* (dragon's bones, certain fossil bones of existing and of extinct animals) in order to check abruptly the action of the stomach and intestines, for the unnatural state of things would reappear with increased severity. Other modifications of an unhealthy kind would supervene, and disease would spread without limit." The expression "it kills like a knife" may be taken as proof that the capsule of which the author is speaking is that of the opium poppy.

That a red tint was common in the poppies of that time may be concluded from the following couplet in a poem of Fêng Tzû-chên, the Yüan dynasty:—"They carry in their hair poppies which are in colour like the red clouds after rain and asters resembling the hoar frost."

11°.

Use of capsules in fourteenth century.

The first name that we meet with in the Ming dynasty is that of a brother of the Emperor Ch'êng Tsu (Yung Lo). He was called Chou-ting Wang. He says in the "P'u-chi-fang" section of "Chiu-huang-pên-ts'ao," a medical work, "The poppy capsule prepared in vinegar is to be used for dysentery and bloody evacuations. One ounce with half an ounce of orange peel (*ch'ên-p'ü*) should be reduced to powder. For a dose take three-tenths of an ounce with black prunes and hot water."

In the Ming dynasty, which lasted through the 15th, 16th, and part of the 17th centuries, the trade of China by sea with India, Arabia, and the islands of the Eastern Archipelago greatly increased; at that time the Chinese ships, being provided with the mariner's compass,† ventured a little farther from land than before, and the extension of the Mongol Empire to Persia had helped to spread intercourse by sea between China and that country. Chêng Ho, who was sent on a diplomatic mission to all important seaports from Canton to Aden, succeeded so well on his first voyage that he was repeatedly dispatched afterwards, and brought back a fairly minute account of the places he visited. He was in diplomatic communication with the chief persons in authority in Aden and some other Arabian ports, in Hormuz on the Persian Gulf, in several cities in India, such as Goa, Cochin, Quilon, and Calicut, as well as other centres of trade nearer home. Can we wonder that all the principal exports in those countries became known to the merchants of Canton and Amoy? They were then probably, next to the Arabs, the chief traders in the Indian seas. When the Portuguese appeared unexpectedly at Cochin in 1498, they commenced at once a career of conquest, and quickly made themselves masters of Aden, Hormuz, Goa, Cochin, Calicut, Malacca, and many other cities. With military prestige they joined great activity in commerce, and became the chief merchants in the East. At this time, as we learn from Barbosa, opium was among the articles brought to Malacca by Arabs and Gentile merchants, to exchange for the cargoes of

Chinese junks. He also states that opium was taken from Arabia to Calicut, and from Cambay to the same place, the Arabian being one-third higher in price than the Cambay. The opium exported from this seaport may be assumed to have been manufactured in Malwa, which lies quite near it.

The Arabs, then, had already begun to grow opium in India in the 16th century. In addition to this we are also told that from places on the Coromandel coast opium was exported to Siam and Pegu. Here we also find clear indications of the activity of Arab traders in extending the cultivation of the poppy in India. The Chinese also at this time imported opium themselves, to be used medically. It is important to note this for the proper understanding of the history of opium in China.

12°.

Wang Hsi, an author who died in A.D. 1488, published a work which he named "I-lin-chi-yao. In it he says that "Opium is produced in Arabia from a poppy with a red flower. Water should not be allowed to go over its head. After the flower has faded in the seventh or eighth month the capsule, while still fresh, is pricked for the juice."

First mention of opium extract was in fifteenth century. Arabian method of obtaining opium.

He also says, "In chronic dysentery use opium of the size of a small bean, and administer it with warm water before the patient takes food (as in the early morning), when the stomach is free. Take one dose a day, and avoid onions, garlic, and soups of all kinds. If thirsty drink water with honey in it."

Wang Hsi's directions for use of opium.

He also says, "Opium may be used to cure obstinate dysentery of long continuance. When the flower of the poppy has fallen and the head is developed, after waiting four or five days take a large pricking instrument and prick from 10 to 20 holes in the fresh capsule. Next day, in the morning, when the sap exudes, use a bamboo knife for the purpose of scraping it into an earthenware vessel. Let it dry in a shady place. On each occasion of using it take a piece of the size of a small bean, and let it be administered on an empty stomach and mixed with warm water. Let the patient avoid onions, garlic, and all soups. If he be hot and thirsty let him drink water with honey in it."

Wang Hsi's directions for procuring opium from the poppy.

This author, it will be observed, died 10 years before Vasco de Gama arrived in India. His biography, in the "History of the Ming Dynasty," shows that he was in official charge of the Province of Kansuh for more than 20 years. His duties included the care of the Mahomedan population of Hami, Turfan, and other western cities. He must have known well the productions, the medical practice, and the customs of the Mahomedan countries; hence his minute acquaintance with opium.

Wang Hsi's knowledge, how acquired.

In the first of the three preceding paragraphs the "Pên-ts'ao" account of Wang's remedy against diarrhoea has been followed; in the paragraph which comes after it the fuller statement found in the Korean work "Tung-i-pao-chien" has been given. It seemed better to insert both in this list of passages, because they bear on the point of the manufacture of opium by the Chinese in their own country in the 15th century, of which there can remain little doubt if the extract from the "Tung-i-pao-chien" be fairly considered. The author first mentions the disease and then details the mode in which the medicine which is to cure it may be obtained.

Fullest details, where found.

Both accounts are professedly taken from Wang Hsi's book. In the absence of the book itself it cannot be decided which is the more correct. Probability is in favour of the last, because it is fuller than the other.

13°.

In the Ming dynasty, in the middle of the sixteenth century, we find an author, Li Ting,* in his work "I-hsiao-ju-mên," saying opium or *a-fu-yung* is made in the following manner:—"Before the head opens the poppy is approached with a bamboo needle and the capsule pierced in 10 or 15 places, from which sap comes out. The next morning a bamboo knife is used to scrape the sap into a vessel of earthenware. When a good quantity has been collected it is sealed up with paper and placed in the sun for a fortnight, and then the opium is ready. Its influence and effects are most powerful, and much must not be used."

Mode of preparing opium in the sixteenth century.

* See for particulars Bretschneider's "Botanicon Sinicum, page 49. He lived in the second half of the fourteenth century. His biography is found in the "Yüan-shih."

† The floating compass is mentioned by Hsü Ching, ambassador to Corea, as having been in use on board of his ship in his voyage from Ningpo to Corea in the year A.D. 1122.

* He belonged to Chien-an-fu, in Shensi. There was in the Sung dynasty another Li Ting, who wrote on divination and the I-ching.

Medical
use.

He also says, "In cases of dysentery with weakness, and when chronic, with all sorts of dysentery indeed, a good remedy will be found in 4 ounces of *huang-lien* (*Justicia*) prepared over the fire with *wu-chu-yü* (*Boymia Ruticarpa*) which has been separately made to simmer in water beforehand. To these are to be added 1 ounce of putchuck and 1 mace of opium. This mixture is pulverised and rolled into pills with paste made of ground rice. The pills are to be of the size of green beans. 20 or 30 are to be taken at a time, accompanied by a warm draught made with the kernels of lotus seeds which have been stewed in water. The patient is then to go to sleep well covered. The effect is marvellous." (Taken from the "Tung-i-pao-chien.")

Prohibition
of Foreign
trade en-
couraged
native pro-
duction.

This author lived during the time when foreign trade was prohibited. He is mentioned in the "History of the Ming Dynasty" as belonging to the Chia Ching period (1522 to 1567), after which by a new law European vessels were allowed to trade with China. During the first half of that reign the Japanese made frequent raids upon the Chinese coast. This caused deep indignation, and not only they but all foreigners were forbidden to trade with China. This was in the year 1523. This naturally rendered foreign medicines scarce and dear, and therefore we are not surprised to find exact directions given by contemporary medical authors as to how opium might be manufactured from the poppy, it being then a highly esteemed drug and having been recommended by medical authors for half a century or more.

14°.

Kung Yün-
lin's pre-
scription.

The next author to be cited in the Ming dynasty is Kung Yün-lin or Kung Hsin. He says in curing white and red dysentery use opium putchuck, *huang-lien* (*Justicia*), and *pai-shu* (*Atractylodes*), each in equal quantity. Pulverise in a mortar and mix into pills with rice, making the pills of the size of a small bean. The old and the young must take half as much as the middle-aged and the strong. Take the mixture with rice water after being without food for some hours. Avoid sour things. Take nothing raw or cold. Take no oil, fat, tea, wine, or flour. The disease will be certainly checked. If thirsty drink a little rice water.

Medical use
of poppy
bracts of
red and
white
varieties of
*Papaver
somni-
ferum*.

Another method is to take from the bud of the poppy flower before it has opened the two green leaves which enclose it and drop off when the flower opens. Pulverise them and take one-tenth of an ounce with rice water. The effect will be marvellous. According as the diarrhoea is of the red or white kind, use the bracts of the red or white poppy.

This use of the bracts which envelop the poppy flower is peculiar to this author. He was a native of Kiangsi and belonged to the Medical Board in Peking.

Golden
elixir pill.

He also made a pill celebrated for its healing power and called the golden elixir. It was thought to be able to cure 24 different diseases, which are detailed in the "Pên-ts'ao" of Li Shih-chên, with a statement of the decoction to be taken with the pill in each case. In this pill, *I-li-chin-tan*,* Opium was used to the extent of one hundredth of an ounce and mixed with glutinous rice, to be divided into three pills, one being a dose. If ineffectual, another was taken. It was forbidden to take many of these pills. Vinegar was not to be used, for fear of internal rupture of the visceral organs resulting in death.

In Kung Sin's work, called "Wan-ping-hui-ch'un," cited in the "Tung-i-pao-chien," there is another golden elixir, for pain above or below the diaphragm. 2½ mace of opium, with 1 mace of asafetida, half a mace of putchuck and of aloes, and a quarter of a mace of cow bezoar. The three last were first pulverised together. Opium and asafetida were placed in a cup and made liquid by dropping water upon them and stirring over a fire. The whole was mixed with honey and made into pills of the size of green beans and gilt. When the body was hot the pills were taken with cold water; when the body was chilled they were taken with boiling water.

The same physician also made purple gold pills with bezoar and other drugs, to help the good effects of opium. The preceding passages are from Li Shih-chên and the "Tung-i-pao-chien."

15°.

Native
account of
foreign
trade before
the pro-
hibition.

In the work "Tung-hsi-yang-k'ao," an account of counties belonging to the Eastern and Western Seas,

* This was also used in Peking, says Li Shih-chên, as a prodissac and quite extensively, beyond the range of regular medicine.

it is said, "In the Sung dynasty, when merchant vessels went to sea the high officials of the ports from which they sailed went to the seashore to escort them. I have gone up the mountain at the entrance of the bight leading to Ch'uan-chou-fu (Amoy) and seen the inscriptions, with dates, on the rocks which record these things. At that time the regulations were very stringent, as if the matters in hand were of great importance. In the province of Fukien, in the Sung and Yüan dynasties, superintendents of foreign trade were appointed at each port, under the name *Shih-po-ssü*. At the beginning of the present dynasty (Ming) this system remained unaltered, but was afterwards allowed to fall into neglect. In the period from 1465 to 1506 it happened that in the more powerful families connected with commerce there were adventurous persons who went on large ships beyond seas to trade. There were at that time bad men who secretly opened out new paths in which to gain profit, while the officers placed in charge failed to secure, openly at least, in these profitable transactions any share for the Government. At first they succeeded in gradually enriching themselves, but in course of time this sort of trade degenerated into a rivalry as to who should shoot his arrow farthest and into various irregular proceedings." The same work further says that "Along the seashore there is much land which is so full of potash and soda that the farmer can realise no harvests from it. It is only possible to look on the sea as the soil to be worked. This led to various employments connected with the sea. The rich collected a revenue from imported goods, and safely brought back with them the sheaves which they reaped in the harvest of the waters! The poor also laboured for a wage, and stretched out the hand to seize the pint measure of rice which they needed to support them in their toil. But the day of rigorous prohibition arrived. These people could not, as before, gain a living through the arrival of merchant ships. They were strong and hearty. They would not fold their hands and sit down inactive in poverty and want. Troubles consequently occurred in succession, resulting in disturbances of the public peace. Men of this class hid themselves in places beyond the local jurisdiction, and having rudely impinged on the law's net they dared not return to be apprehended. In addition to this they conducted barbarians from a distance on various occasions into the places to which they belonged."

Bad effects
of prohibi-
tion.

The author proceeds to say that when the prohibition was withdrawn from foreign commerce and revenue collected from goods and merchant vessels, the Government gained in revenue and the people in tranquillity. In particular the local military expenditure was supplied to a fixed extent each year from this source. He then remarks, "The duties levied were of three kinds, according to the rules then in force: there was the water duty, the land duty, and the supplementary duty. The water duty was tonnage, and was levied on the representative of the ship. The land duty was duty on goods, fixed *ad valorem*, and levied, according to the quantity of goods, on the merchant doing business on shore. In respect to this, from fear of smuggling, it was the rule that the super-cargo (*ch'uan-shang*) should not deliver goods until the presentation of a memorandum addressed to the merchant on shore who was the buyer of goods, stating the amount of duty for the goods mentioned, and directing him to go to the vessel and pay the duties there; after this the goods might be removed. As to the supplementary duties, they were levied in case of an error in the declared measurement of the vessel in feet, to be added to (or subtracted from) the tonnage."

Good effects
of permis-
sion to
trade.

Duties
levied.

Further, in the year 1589 a tariff was issued, stating the duties to be levied on each kind of goods and approved by the military commandant. In this tariff myrrh, gum olibanum, and asafetida, with other articles, are entered at a fixed rate of 3½ mace per cwt. for myrrh, and 2 mace per cwt. for the other two. Opium is rated at 2 mace of silver for 10 catties, or 2 ounces per cwt. In the year 1615 a new tariff was issued, in which opium appears rated at 1 ⅓ mace for each 10 catties.

Tariff of
A.D. 1589.

Tariff of
A.D. 1615.

16°.

Li Shih-chên, author of the "Pên-ts'ao-kang-mu," finished that work A.D. 1578. After saying that the poppy is called *yü-mi* because it is a grain (*mi*) which can be used in making presents, and *hsiang-ku* because

Li Shih-
chên's
*Materia
Medica*.

it resembles millet (*ku*), he adds that it is sown in autumn, and in winter is above ground in the form of tender stalks which may be used as food and constitute an excellent vegetable, the leaves being like lettuce. In the third or fourth month the flowering part of the plant is well advanced and protected by bracts, which fall off when the flower opens. There are four petals, which, taken together, are as large as a saucer. The capsule is in the centre of the flower, folded in stamens. The flower falls on the third day after opening, leaving the capsule at the top of the stem. It is 1 or 2 inches in length, and in size like the *ma-tou-ling* (a drug, capsule of the bladder tree). It has a lid and a short stalk. In shape it is much like a wine jar. In it there are many white grains, which can be used for making a sort of porridge for taking with ordinary food. If the seeds are ground with water, and mixed with green beans first ground so as to make a jelly, it will be found excellent. Oil also can be made from the seeds. As to the capsules, they are much used in medicine, but are not mentioned in the old "Pharmacopœia." From this it may be concluded that in ancient times the capsules were not used.

The author refers here to the Northern Sung dynasty, A.D. 960 to 1126, when the poppy first appeared in the "Pharmacopœia."

He proceeds, "In Kiangsu the double poppy is called *li-ch'un-hua*, flower of the bright spring. This is said by some to be a variety of the *ying-su-hua*; but this is a mistake. Its flower changes perpetually. It may be white, or red, purple, pink, or apricot yellow, or it may be half red or half purple and half white, and is very beautiful, and this is the reason that it is called the *li-ch'un*. It is also known as the 'Moutan pæony's rival and the flower of the embroidered coverlid.' He also says of the seeds of the poppy that they cure diarrhoea and relieve feverish symptoms, and of the capsules that for medicinal purposes they should be well washed and softened in water. "The stalk and outer skin should be removed and also the stringy fibres within. Let them be dried in a dark place and cut very small. They are then to be well mixed with rice vinegar and placed over the fire to simmer, after which they are fit for use as a drug. They may also be prepared with honey instead of vinegar. In taste and nature the capsules thus prepared are sour, astringent, and slightly cooling, without being poisonous. With vinegar, black prunes, or orange peel they are most effectual in curing diarrhoea, asthma, rheumatism, or pain in the heart and abdomen."

Proceeding to speak of opium, he says, "Formerly opium was not much heard of; recently it has been used by some in medical recipes. It is said to be the juice of the *ying-su-hua* (or poppy). While the head of this flower is still green, in the afternoon take a large needle and prick the outside skin, taking care not to wound the inner hard shell. It is to be pricked in from three to five places. The next day, when the sap has come out, take a bamboo knife and scrape it into an earthenware cup. Let it be dried in the shade. It being made in this way accounts for the fact that this article when bought in shops has mixed with it pieces of the skin of the capsule. It is a sour astringent, and can cure, etc. Especially is the elixir *I-li-chin-tan*, made with it, useful for curing a hundred diseases."

17°.

In the "T'u-shu-chi-ch'eng" we find a passage from a work on flowers by an author named Wang Shih-mou, who lived at the end of the 16th century.* He says, "After the pæony (*shao-yao*) the poppy is the most beautiful of flowers, and grows most luxuriantly. It changes readily. If care be taken in watering and planting, it becomes very handsome, and assumes a thousand varieties of shape and colour. It even becomes yellow or green. Looked at from a distance it is lovely; when nearer it becomes less attractive. I have heard that the seeds can be used as food, and have a strongly astringent effect."

In the work on flowers published in the time of Kang Hsi, under the name "Kuang-ch'ün-fang-p'u," there is a poem on the poppy by Wu Yu-p'ei, of the Ming dynasty. "In the court which fronts the hall, a long way down, when the daylight is lengthened, before the terrace are flowers of the genii breathing out abundant fragrance. A vapour encircles them,

"and there are rain drops upon them, where they put forth their lovely forms. They have a red tint and glossy lustre, and their appearance is beautiful. They are sown in mid-autumn and must wait for the coming year. They open their flowers in early summer, and are companions to the declining sun. Another thing to be praised is their seeds, heaped up in large capsules one after the other. Why, then, be content with what is ugly and only gather rice and such-like grain?"

In the "T'u-shu-chi-ch'eng" there is a passage from a work called "Ts'ao-hua-p'u" the book of plants and flowers, which says, "The poppy has a thousand petals and all the five colors. Its petals are shorter than those of the flower called *yü-mei-jên*, and more graceful. Through the whole garden the spring alighting upon them seem to fly as they move to the breeze. The seeds are sown in spring."

18°.

In the work called "Wu-li-hsiao-shih," written at the end of the Ming dynasty and the beginning of the present, it is said of the poppy that it is sown in the middle month of autumn, at noon. After flowering, the seed vessel grows into the shape of a vase. The tiny seeds can be eaten as porridge. Oil is also obtained from them, and the capsules are useful in medicine; they are powerfully astringent. When the capsules are still green, if a needle be used to puncture them in 10 or 15 places, the sap will come out. This should be received into an earthenware cup, which may be covered carefully with paper pasted round the edge. Let the cup be exposed to the sun for 14 days; it is then opium, ready for use as an astringent, and restrains reproduction most powerfully.

19°.

Carefully weighing what is said in the passages preceding, it appears plain that from the latter part of the fifteenth century the manufacture of native opium has existed in China, and it is not only in recent years that there has been both native and foreign opium in this country. Let the reader examine the various accounts of the manipulation by four different authors. Wang Hsi's book cannot now be procured, but judging by what is quoted from him in Li Shih-chên's work, he meant to describe the method of poppy culture in Arabia, and spoke particularly of a kind which yielded the opium sap in the 7th and 8th months or later. When, however, he speaks, as in the passage translated from the "Tung-i-pao-chien," of obstinate diarrhoea needing opium to cure it, and advises the physician to make opium direct from the poppy in a way which he describes, he must be speaking of a Chinese made article. Li T'ing's account differs in too many points from that of Wang Hsi to be regarded as a second-hand statement based exclusively upon it. If so, then Li T'ing is a third and independent witness on this subject, the fourth being the author of the work "Wu-li-hsiao-shih."

20°.

Early in the seventeenth century a Dutch physician named Jacobus Bontius went to reside at Batavia, and died there. What he wrote on medicine was afterwards included in the work of Gulielmus Piso, "De India utriusque Re naturali et medica Libri XIV." (Elzevir, 1658).* The preface of Bontius is dated Batavia, 1629. He says that those nations which use opium seem drowsy, and are dull in commerce and in arms; but unless we had opium to use in these hot countries, in cases of dysentery, cholera, burning fever, and various bilious affections, we should practice medicine in vain. This was the basis of the ancient medicines, theriac, mithridate, and philonium.

The poor Indians use the leaves and branches of the poppy to prepare an inferior sort of opium, which they obtain by drying in the sun. They call *pusti*, and they themselves are nicknamed *pusti*. The rich, who indulge in the more expensive drug, are known as *affûmî*. The Greeks knew the danger of opium but not its merits, which are clearly divine, and which they failed sufficiently to explore.

Bontius prescribed curcuma, made from opium and the Indian crocus, *Hsi-tsang-hung-hua*. This was his refuge in dysentery, cholera, phrenitis, and spasms. He took refuge in opium as a sacred anchor, he tells us, in desperate cases. He used poppy seeds and poppy

Another account of the mode of obtaining opium from the poppy.

Résumé.

Opium in Java in 1629.

Bontius' opinion of opium.

* He died 1690. See Biography 175 in "Ming History."

* Kindly lent by Dr. E. Bretschneider.

heads. He says that opium helps nature to conquer the enemy by inducing sleep, and that he could prepare it so that it should not injure even an infant.

21°.

Towards the end of the Ming dynasty the practice of taking opium medically or otherwise by swallowing it was destined to be soon changed for the habit of opium-smoking. It is requisite, therefore, in proceeding with this record to enter on the subject of tobacco and tobacco-smoking, in order to introduce by easy transition this new step taken by the Chinese in the use of opium.

22°.

In the latter years of the Ming dynasty tobacco cultivation and tobacco-smoking were introduced into China from the Philippine Islands. Here the Spaniards had settled, and they were in constant communication with America. The tobacco plant crossed the Pacific and flourished in the neighbourhood of Manila. The first place in China where it was planted was at Amoy; it was brought there by Fuhkien sailors trading to Manila. In the work above cited under the name "Wu-li-hsiao-shih," written about A.D. 1650, we are told that tobacco was brought to China about A.D. 1620, which would be about the same time that King James I's "Counterblast to Tobacco" was being circulated in England as a new publication. Tobacco was called the smoke plant "or *tampaku*, or *tan-pu-kuei*."

In the time of the last Ming Emperor, who reigned from 1628 to 1644, tobacco-smoking was prohibited, but the habit spread too rapidly to be checked by law. The origin of opium-smoking is thus accounted for. Various ingredients were in various countries mixed with tobacco to try their effect; among them was opium. Arsenic was another ingredient, which is still used by the Chinese in what is called "water tobacco."

The Manchus now took the place of the Ming dynasty. There is a historical work called the "Tung-hua-lu," which gives the events of the first century of Manchu rule in the form of a chronicle. In the year 1641 there is in this book an account of an edict which has reference to tobacco. The Emperor asks the princes and high officers, "Why do you not lead the soldiers yourselves in the practice of archery? The elder youths should practise the horn-bow and winged arrow; the younger should be skilled in using the wooden bow and willow-twist arrow. Our dynasty in military exercises makes archery the chief thing. To smoke tobacco is a fault, but not so great a fault as to neglect bow exercise. As to the prohibition of tobacco-smoking, it became impossible to maintain it, because you princes and others smoked privately, though not publicly; but as to the use of the bow,

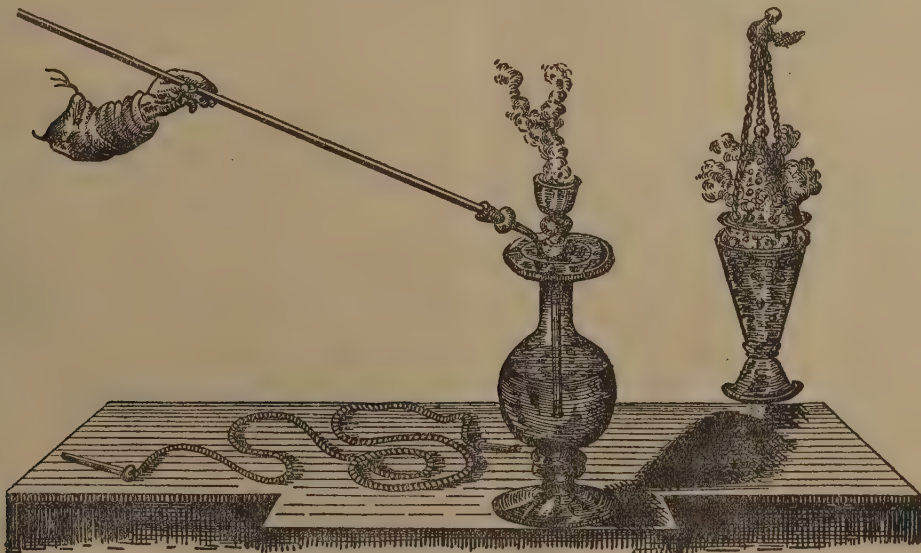
"this must not be neglected." The edicts afterwards promulgated against opium were just as ineffectual as those against tobacco-smoking; and among the causes of their failure must be included the love of opium-smoking by many in high positions, favourites and others, whom it would be very difficult to punish.

In a work called "Shun-hsiang-chui-pi," written 10 or 20 years later than this edict, tobacco-smoking is described as spreading to the city of Soochow and as being quickly adopted by all classes of the people. The author states that this circumstance was much to the detriment of morality; it had previously been a difficult thing to uphold moderation in living, but after this it was far more so. Women as well as men, the inhabitants of villages as well as of large towns, fell into the snare, till the habit became almost universal. This immense popularity of tobacco-smoking was an indication of the readiness of the Chinese nation to adopt the use of narcotics. The same thing which took place in the 19th century with opium-smoking occurred in the 17th century with tobacco-smoking. The Confucian mind was shocked, the sense of propriety was wounded; but this did not prevent the rapid spread of both these modes of indulgence in all circles. Prohibitory edicts were issued in vain by Emperors animated by paternal affection for their people. Tobacco was a less evil than they supposed; opium-smoking was a far greater evil than they feared. In both cases the Emperor was powerless. The Emperor Ch'êng Tsung, as we ought to call him, but who is better known as Tao Kuang, is much to be respected for his strong moral convictions on the subject of opium. He made really great efforts to cope with this evil, but it was in vain. The fondness of the people for inhaling a narcotic was too strong for him to overcome. He failed utterly in the attempt to put down opium-smoking even in the City of Peking. It was as hard to persuade his own people to abandon a bad habit as to conquer England in war.

The habit of tobacco-smoking became national, and went on extending itself for a century, till soon after the close of a long reign of Kang Hsi the attention of the Government was drawn to opium-smoking as a new vice in Formosa and at Amoy. It grew up in the same part of the country where tobacco-smoking had been introduced.

23°.

One of the most valuable works to be consulted on the subject of early opium-smoking, its connexion with tobacco-smoking, and the opium trade as it existed at the end of the 17th century, is the *Amœnitates exoticæ* of Kæmpfer. Some passages from this work, recording his observations on tobacco, hemp, and opium, will now be given. They were first published in 1712, but the original notes from which they were compiled were taken 20 years earlier.



[Pipe for smoking tobacco through water.]

"*Nicotiana* ante sesqui circiter secula toti antiquo orbi, adeoque et Persiæ, cepit a Lusitanis transvect-
oribus innotescere. Nomen ubique habet *tabaci*, et pro diverso gentium idiomate *tobak*, *tabacco*, *tombak* et

tembak, ab insula hujus nominis Americana, quæ herbæ copiam inventoribus dederat. Plantæ vix nomen innotuerat, quin simul cultura celebrari ubique coepit, et fumandi usus omne humanum genus stupenda

velocitate incantaverit. Plantam, Hyosciami speciem si negamus, ex classe tamen venenatarum nequaquam eximenda fuerit; cum vertigines, anxietates et vomitus, quos fumigata in non abusetis concitat, malignitatis testes sint luculenti. Experimentis Redianis constat, olei ejus guttulum recentis immissum vulneri, pullos volucrum enecare, hominibus vero inferre periculosa symptomata. Vidi bajulos circa Casanam Tartariæ qui perforatum cornu bubulum foliis plenum, super positis carbonibus, paucis haustibus evacuabant; ex quo instar epilepticorum prosternebantur, pituita spumoque diffuentes. Quam vero venenata sint folia, eorum tamen fumus consuetudine homini fit familiaris, ut, non modo non noceat malignitate sua, sed benigniori sale serum ex capitis recessibus eliciat, ac cerebrum hilaritate impleat. Quod ut præstet felicius, Persæ fumum trahunt per machinam, aqua ultra dimidium plenam, quæ fetidum et cerebro inimicum sulphur imbibens, fumum transmittit ab omni malignitatis acrimonia defæctum, frigefactum et sincerum. Machina illa, quam *khalioan* vel *khalium* vocant ampulla est sesquipedalis altitudinis, vitrea, oblongo ponata collo; cujus orificium claudit orbiculus æneus, in sesquipalmarem diametrum expansus, duos in medio permittens tubulos invicem adsolidatos, æneos; unum, cujus inferior pars in ampullam demissa, aquæ immergitur; superior recipit nicotianæ cum impositis carbonibus retinaculum, infundibulo seu buccinæ orificio simile: alterum brevior, cujus demissa extremitas aquam non attingit: superior incurvata arundinem excipit longam, quæ fumus attrahitur. Tubulorum propago, proxime sub orbiculo, telaxylina arcte circumvoluta est, in eam crassitiem, quæ vitri orificium cum modica colli parte expleat atque claudat acutissime: ita evenit, ut ad suctum non possit nisi ex infundibulo fumus succedere; qui jucundo strepitu aquam penetrans, primo inane vitri spatium occupat, inde per arundinem ad os sugentis atque ipsos pulmones pertingit; attractio enim, non bucca aut labiis, ut vulgo solet, sed toto pectore peragitur, quo ipso fumus per pulmones se diffundit. Si acrior herba sit, concisam prius aquæ immergunt exprimuntque, ut a crudiori acrimonia liberetur: quod idem a Sinensibus et Japonibus factitatum vidi. Modum fumandi per machinam e Persis edocti sunt Arabes Hindostani, seu Indi magni Mogolis, et, qui cum religione mores Arabum adoptarunt, nigræ quidam insulares; sed his, quod vitra deficiant, pro ampulla servit excavatus cortex cucurbitarum. Turci, Sinenses, Japonenses, Europæorum more fumum trahunt per fistulam, receptaculo tabaci accensi insertam. Nigræ gentiles fumum sine instrumento hauriunt, rotatis foliis in turbinem, cujus basin accendunt, apice labris retento et sucto.

Hookah or water pipe.

The Persian pipe for smoking tobacco through water here described by the traveller is the parent of that now in use among the Chinese, and of the Indian hookah. The Persians taught its use to the Arabs of Hindustan, the Hindus, and the black inhabitants of Asiatic islands. It spread with the religion of the Arabs wherever they went.

Summary of Kæmpfer's account.

According to Kæmpfer's account, tobacco-smoking had during a century and a half been gradually spreading through all countries. It was introduced into Persia by the Portuguese while prosecuting their trading operations in the ports of the Persian Gulf. The poisonous qualities of tobacco he proves by what he had himself seen of its effects. Fowls die if tobacco oil is injected into a recent wound. He saw at Kasan porters smoking in a peculiar way. They filled a cow's horn with tobacco leaves, placed it over burning coals, and smoked through a hole in the horn; after a few whiffs they fell down in a state of something like foaming epilepsy. Yet he adds, when smokers are accustomed to the use of tobacco it soothes the brain and promotes cheerfulness.

Object of the water-pipe.

The invention of the water-pipe was intended to assist in removing the poisonous and unpleasant qualities of tobacco. The smoke on passing through the water is free from sulphurous fumes, moderated in strength, cooled, and purified. Glass vessels were first used, with brass fittings. The natives of the Eastern Archipelago, not having glass, used the calabash instead.

Cigars.

The author adds that while the Turks, Chinese, and Japanese all smoke with a pipe, like the Europeans, the black natives of the islands have a way of their own; they roll the tobacco leaves into a twist, which they light at one end and smoke from at the other.

“Alterum atque interni usus *kheif* ex papavere sumitur: quo Indi Persæque hortos et agros conserunt, ut lactescentem succum ex læsis capitibus proliciunt. Hunc succum Europa *Opium*; Asia, cum *Ægypto afium* et *ofium* vocat. Persia idem præparatum, ex reverentia, appellat *theriak*, i.e., Theriacum; nam hæc illis est poetarum illa *galene, hilare, et eudios*, id est, medicina animo serenitatem, hilaritatem et tranquillitatem conferens: quo olim tergemino elogio theriacale antidotum Andromachi appellatum legimus. In Perside collectio ejus celebratur per ineuntem æstatem, propinqua maturitati capita decussatim sauciando per superficiem. Culter negotio servit quintuplici acie instructus, qui una sectione quinque infigit vulnera longa parallela. Ex vulnusculis promanans succus postridie scalpro abstergitur, et in vasculum, abdomini præligatum, colligitur. Tum altera capitum facies eodem modo vulneratur, ad liquorem pariter proliciendum. At, hæc collectio, ob capitum impar incrementum et magnitudinem, aliquoties in eodem arvo instituenda est. Solent in plantis nimium ramosis superfina capita prius amputari: sic reliqua magis grandescunt, et succo implentur majoris efficacæ. Primæ collectionis lacryma, *gobaar* dicta, præstantior est, et graviori pollet cerebrum demulcendi virtute, colorem exhibens albidum, vel ex luteo pallentem; sed qui color ex longiori insolatione et ariditate infusari solet. Altera collectio succum promit, priori, ut virtute, ita pretio inferiore, coloris plerumque obscuri, vel ex rufo nigricantis. Sunt, qui et tertiam instituunt, quæ obtinetur lacryma nigerrima et exigua virtutis.

How opium is made in Persia.

“Præparatio Opii potissimum in eo consistit, ut, aquæ pauxillo humectatum, spatha crassa lignea continuo et fortiter ducatur et reducatur in patina lignea et plana, donec elaboratissimæ picis consistentiam, tenacitatem et nitorem induat. Ita diu multumque subactum, ad ultimum manu non nihil pertractatur nuda, et demum, in cylindros breves rotatum, venale exponitur; forcipe induendum, cum particulas emptores petunt. Hæc serie pertractatum Opium appellatur *theriak malidih*, i.e., theriaca molendo præparata, vel etiam *theriak afium*, id est, theriaca opiata, ad differentiam theriacæ Andromachi, quam illi vocant *theriak farunk*. Præparandi hic labor perpetuus est proplarum, quos vocant *kheifruus*, quasi Germanice diceret *trunken Krämere*, quo illi, in foris et quadrivis sedentes, brachia sua strenue exercent. Massa hæc sæpe numero, non aqua, sed melle subigitur, ea copia admissa, quæ non siccitate modo, sed et amaritatem temperet: et hæc specialiter appellatur *bæhrs*. Insignior præparatio est, qua inter agitandum adduntur nux myristica, cardamomum, cinamomum et macis, in pulverem subtilissimum redacta; qualiter præparatum Opium cordi et cerebro insigniter prodesse creditur. Vocatur in specie *poloniâ*, vel, ut alii pronunciant, *foloniâ*, puta *Philonium Persicum*, seu *mesue*. Alii omisiss aromatibus, tantum croco et ambræ massam infarciunt. Multi præparationem in usum proprium ipsi perficiunt domi suæ, ne a propolis admiscendorum paucitate vel multitudine decipiantur. Præter hoc triplicis præparationis Opium, quod sola pilularum forma deglutitur, prostat, vel etiam a domesticis conficitur, liquor celebris nominis *cocoon* dictus, Græcorum quod puto *Μηκρόνελον* ac Homerianum *nepenthes*, quod a bibacibus propinari affatim per horarum intervalla solet. Parant hujus liquorem alii ex foliis, aqua simpliciter brevem moram coquendis; alii ex capitibus contusis infusione inacerandis, vel iisdem supra filtrum repositis, aquam eandem septies octiesve superfundendo: admixtis pro cujusque placito, quæ saporis gratiam concilient. Tertium addo opiatum genus, electuarium lætificans et lætificando inebrians; hujus electuarii, cujus basin idem Opium etiam constituit, a seplasiariis et medicis, prout quisque ingenio pollet, varie elaboratur, ac diversis ingredientibus ad roborandos et exhilarandos spiritus dirigitur; unde variæ ejus extant descriptiones; quarum primaria et famosissima est, quæ debetur inventori Hasjèm *Beg*, quandoquidem comedentis animum miris perfunderet gaudiis, et magicis cerebrum demulcere ideis et voluptatibus dicitur.

Preparation of opium.

“Opium quod Europæis, si grani unius vel paucorum dosin excesseris, lethiferum nefas audit, a prædominantis populis longa aduetudine ita familiare redditum est, ut drachmam multi sine noxa deglutiant. Multa hoc abusu, vel longiori ejus usu, acciuntur mala; emaciatur enim corpus, laxantur vires, contristatur animus, stupescit ingenium: unde videas instar stipitum somnolentos et quasi elingues sedere in conviviis opii liguritores. Sæpe oblatis mihi sunt, quos a canino

appetitu Opii percurarem, sostro centum aureorum promisso, si hoc citra dampnum et vitæ dispendium præstitero. Exemplum Opii voracium non est, quod adducam, cum eorum pleni sint medicorum libri. Capita papaveris teneriora aceto condita nonnulli in mensa secunda appetunt; alii alia ex iisdem sorbilla conficiunt, pro suo quique placito."

Kämpfer proceeded from Persia in June 1688 to Batavia, which city—then, as now, the chief seat of the Dutch power in the East—he reached in September 1689, after visiting the settlements of that nation in Arabia Felix, India, Ceylon, and the Island of Sumatra. He stayed in Java eight months, and then went to Japan. Of the use of opium in Java he gives the following account:—

"De Opio, ejusque Persis et Indis communi usu, diximus. Addo abusum execrabilem, qui viget inter Indos nigras, ad efferendum animos ad homicidiorum patratorum audaciam; dum vel vitæ suæ, vel injuriarum pertæsi, se devovent mortii, per ultionem et mortes aliorum appetendæ. Eo fine Opii deglutiant bolum: ex quo intentionis idea exasperatur, turbatur ratio, et infrenus redditur animus, adeo, ut stricto pugione, instar tigridum rabidarum, excurrant in publicum, obvios quosvis, sive amicos, sive inimicos, trucidaturi, donec ipsi, ab alio perforati, prosternantur. Aetus hic vocatur *hamûle*, apud incolas Javæ et ulterioris Orientis crebro spectabilis. Vocabuli sonum ibi horret, quicumque audit; nam qui vident homicidam, illi vocem *hamûle* summopere exclamant: monituri inermes, ut fugiant, et vitæ suæ prospiciant: dum ad extinguendam beluam accurrere debet, quisquis armatus et cordatus est. Opii etiam externus usus est apud nigras: nam eodem aqua diluto nicotianam inficiunt, ut accensa caput vehementius turbet. Vidi in Java tabernas levidenses ex arundine, in quibus id genus tabaci hauriendum exponebatur prætereuntibus. Nulla per Indiam merx majori lucro divenditur a Batavis, quam *afium*, quo carere adusui non possunt, nec potiri, nisi navibus Batavorum ex Bengala et Choromandela advecto.

The *tabernæ levidenses ex arundine* here spoken of were the first opium-smoking shops of which we have any record. According to the statement here given, opium diluted with water was smoked with tobacco. This sort of tobacco was exposed to passers-by to be smoked when, two centuries ago, the learned German traveller was taking walks in Batavia to observe the customs of the native population. He uses the word *haurio*; that this here means smoking, and not drinking, is plain from another passage (in *Amenitates exoticae*, page 642), where he says the black inhabitants smoke without a pipe (*sine instrumento hauriunt*), by rolling tobacco leaves into a whirl, which they light at the lower end and smoke from at the upper by holding it with their lips and drawing. Of opium from the Coromandel coast, which then formed a part of the lading of the Batavian ships to take back to Java, we now hear nothing; but the Bengal portion of this lucrative trade finds its lineal successor in the Patna opium of the present day.

24°.

In the year 1723, shortly before the first edict against opium-smoking, a medical work was published with the name "*Chi-yen-liang-fang*,"* by Nien Hsi-yao, a bannerman in Pekin of high rank and great influence in his day. He places among his prescriptions a pill called *Wan-ying-tan*, made of opium mixed with bezoar, camphor, and other drugs, 13 in all. He states that it could cure the diseases of all seasons, including fevers beginning with chill (*shang-han*), epidemic fever, heat apoplexy (*chung-shu*, severe or slight), paralysis, headache, slight fever, vomiting with diarrhoea, ague, pain in the heart, abdominal pain, and the like. Two pills are prescribed for severe cases, and one when the attack is slight; they are to be taken with cold water.

He also recommends a plaster called *Yü-chên-kaò*, to be attached at the navel. It adds to the vigour of the body and saves it from decay, warms the kidneys, strengthens the loins and knees, removes cold and wet chill, with all abdominal pains, and is useful for healing all sorts of affections to which men and women are subject. It is made by mixing opium, musk, *yang-ch'i-shih*, oilbanum, cloves, and the like; 14 other drugs are added. By gradual decoction it is prepared for use and employed as required. There is another prescription, called the *Pao-yang-ling-lwei-shên-fang*, or marvellous recipe of the efficacious tortoise for the preservation of

health; it is formed by mixing opium with *ch'an-su* (a medicine made of the oily part of toads) and such things, and adding 33 other kinds of medicine. It is prepared with oil for use.

25°.

There is a work on Formosa called "*T'ai-hai-ts'ai-fêng-t'u-k'ao*," which was published in 1746. It contains extracts from earlier works, and among them one by a native of Pekin named Huang Yü-pa, who was at some earlier date sent to Formosa and wrote an account of what he saw there, which was published under the name "*T'ai-hai-shih-ch'a-lu*." He gives the following statements from this work on the subject of opium-smoking. Opium for smoking is prepared by mixing hemp and the (root of the) grasscloth plant (*Pachyrhizus angulatus* or, may be, *Pueraria Thunbergia*, Dr. Bretschneider) with opium, and cutting them up small. This mixture is boiled with water in a copper pan or tripod. The opium so prepared is mixed with tobacco. A bamboo tube is also provided, the end of which is filled with coir fibres from the coir palm. Many persons collect this opium to smoke mixed with tobacco. The price asked is several times greater than for tobacco alone. Those who make it their sole business to prepare opium in this way are known as opium tavern keepers. Those who smoke once or twice form a habit which cannot afterwards be broken off. Warmth is conveyed in a vaporous form to the *tan-t'ien** ("red field," located in the kidneys), so that the whole night can be passed without lying down. The aborigines smoke as an aid to vice. The limbs grow thin and appear to be wasting away; the internal organs collapse. The smoker unless he be killed will not cease smoking. The local officers have from time to time strictly prohibited the habit. It has often been found that when the time came for administering the *bastinado* to culprits of this class, they would beg for a brief respite, that they might first take another smoke. Opium came from Java.

Of the various early narratives which describe the habit of smoking opium with a bamboo pipe, the account we have here seems to be the most minute. It is not stated in what year it was written, but the year in which it was reprinted as an extract was 1746. In reference to the last sentence, which says that opium came from Java, it should be observed that it agrees with what Kämpfer in his book states. He found that diluted opium was mixed with tobacco to offer to passers-by to smoke; he observed this during his residence in Java. We learn from this that it was tobacco-smoking which led to opium-smoking. During the reign of Kang Hsi Koxinga occupied Formosa for a time. It was about that time that the island received the name "Taiwan." In the Ming dynasty we meet only with the names Tamsui and Kelung. In the days of Koxinga many Chinese colonists went over from the mainland to reside there. There was constant communication with Java by trading vessels. Many wanderers without a livelihood from various countries went there from time to time, and it was through this class of persons that the pernicious habit of opium-smoking originated in Formosa.

26°.

In the work named "*T'ai-wan-chih*," or topographical account of Taiwan,† it is said, "It is not known from what place the practice of opium-smoking was introduced. The opium is boiled in a copper pan. The pipe used for smoking is in appearance like a short club. Depraved young men without any fixed occupation used to meet together by night to smoke; it grew to be a custom with them. Often various delicacies prepared with honey and sugar, with fresh fruits, to the number of 10 or more dishes, were provided for visitors while smoking. In order to tempt new smokers to come, no charge was made for the first time. After some time they could not stay away, and would come even if they forfeited all their property. Smokers were able to remain awake the whole night and rejoiced, as an aid to sensual indulgence. Afterwards they found themselves beyond the possibility of cure. If for one day they omitted smoking, their faces suddenly became

* The Chinese letter has a threefold meaning. The seat of the *tsing* (semen) is three inches below the navel; that of breath is in the brain. The seat of the soul is in the heart. The first is here chiefly meant. See "*Tung-i-pao-chien*," 1, 12.

† Kindly lent by Dr. Dudgeon, who was the first to discover the native account of the origin and first progress of opium-smoking in Formosa.

* Kindly lent by Dr. Dudgeon.

"shrivelled, their lips opened, their teeth were seen, they lost all vivacity, and seemed ready to die. Another smoke, however, restored them. After three years all such persons die. It is said that the barbarian inhabitants of Formosa thus use craft and cunning in order to cheat the Chinese residents out of their money at the expense of their lives. The foolish are not sensible of their danger, and fall victims. This habit has entered China about 10 or more years. There are many smokers in Amoy, but Formosa is the place where this vice has been most injurious. It is truly sad to reflect on this."

27°.

Prohibitory edict of 1729.

In the year A.D. 1729 an edict was issued on opium-smoking, prohibiting the sale of opium and the opening of opium-smoking houses. The Government found itself face to face with a dangerous social evil of an alarming kind. The physical effects of opium-smoking as displayed in the shrivelling up of the features and an early death, as thus described by eye-witnesses, produced a deep impression in Peking. The sellers of opium were to be punished, not the buyers. The masters of opium shops are dealt with most severely, as being the seducers into evil paths of the young members of respectable families. Sellers of opium were to bear the wooden collar for a month, and be banished to the frontier. The keepers of shops were to be punished in the same way as propagators of depraved doctrines; that is, they were to be strangled after a few months' imprisonment. Their assistants were to be beaten with 100 blows, and banished 1,000 miles. Everyone was to be punished except the smoker; for example, boatmen, local bailiffs, neighbours lending help, soldiers, police runners, in any way connected with the matter, all had punishments assigned them. The same was true of magistrates and Custom House superintendents in the seaport towns where these things had happened; all were to bear some penalty. Only the opium-smoker was exempted. It was felt, perhaps, that his punishment was self-inflicted; he would die without the help of the law. This edict was followed by another the next year for the checking of evil practices among the colonists of Formosa. All guilty of robbery, false evidence, enticing the aborigines to commit murder, the sale of gambling instruments or of opium for smoking, are to be punished with death or banishment.

Spread of opium-smoking in the eighteenth century.

Opium-selling for smoking purposes has from this time forward been regarded as a crime by the ruling authorities. From their point of view it is considered as criminal in proportion to the mischief it causes, which is without doubt great beyond computation. The very earliest instance of legislation on this matter is here before the reader. It was based on local events occurring on the sea-coast, a long way from Peking. The gradual spread from the province of Fuhkien, to all the provinces was still in the future and was not before the minds of the legislators. The sale of opium was connected in their minds with gambling, robbery, and false accusation; its special guilt consisted in its being a temptation to evil on the part of the salesmen, as the drug was destructive of the physical health, comfort, and life of their victims. The effects proved the criminality. Further, it was closely conjoined with various crimes already condemned in the statute book. It sprang up in a lawless locality at a great distance from Peking; there was therefore no inclination to leniency from the fear of offending persons or classes whom the Government would not like to offend. The law was in consequence promptly made, decided in tone, and severe in detail. Was this law acted upon? No allusion was made to it by the Jesuit missionaries in the "Lettres édifiantes" or in the "Mémoires concernant les Chinois." The habit of opium-smoking is not mentioned in these works. The trade in opium certainly remained as before. 200 chests a year continued to be imported, and in 1767 that quantity had gradually increased to 1,000 chests. The duty was *Tls. 3 a chest*.^{*} It would appear, then, that the old tariff of the Ming dynasty was still followed in the main. The sale of opium was prohibited by statute, but we do not find proof that it was refused as a drug at the Custom Houses of Amoy and Canton. The import

steadily increased during the time it was in the hands of the Portuguese, till English merchants took it up in 1773, after the conquest of Bengal by Clive. The East India Company took the opium trade into its own hands in 1781. At that time the minor portion only of the imported opium was devoted to opium-smoking—at least we may assume this. The Superintendents of Customs in those days would continue to take the duty on opium as a drug. What was contraband they would say was *ya-pien-yen*, which means opium for smoking; the drug *ya-pien* would still pass the Customs as medicine. This seems to have been the reason that the import still continued to increase at about the same ratio as before the edict of A.D. 1729, not till after 40 years reaching a quantity amounting to 1,000 chests. Medicine claimed opium as a most powerful agent, and since the commencement of the trade at Canton and Amoy, whether the merchants were Portuguese, Chinese, Arabs, or Dutch, it was as medicine that it had been sold. When Defoe says of his hero in "Robinson Crusoe" that he went from the Straits to China in a ship with opium, it was as a drug that he pictured it to himself. Up to that time it was in fact a part of the trade in medicine; not long after it became a trade in a drug used medically and for smoking combined.

28°.

The native growth in Yunnan of the opium poppy can be traced to about the same time, or a little later. In the history of that province, published in 1736, it is stated that opium was then a common product of the department of Yung-ch'ang-fu, in the western part of that province, where it borders on Burma. It may have been introduced by the Mahomedans, who were fond of it themselves, as a powerful medicine, or it may have been brought there from Burma and Thibet. It is spoken of in the accounts we have of the trade of the 16th century as having been introduced along with woven fabrics by traders coming from the coast of India. Negapatam and Meliapur are mentioned as exporting both opium and woven fabrics to Pegu and Siam. The seeds of the poppy may therefore have been taken by the Burmese route to Yunnan. This native opium would be intended, not for opium-smoking, but to be used medically, as by a physician's prescription, or by the contraction of a habit of daily consumption in a way like of that De Quincey and Coleridge.

Native opium in Yunnan.

The Mahomedans have long been a power in the province of Yunnan, and their agency is to be suspected in this early cultivation of the poppy in that part of China. It was they that first learned from the Greeks the wonderful soothing powers of this drug. They cultivated the poppy in Arabia, then in Persia, then in India. It was from them, in the Ming dynasty, that the Chinese learned the way to cultivate the poppy and derive the opium juice from the capsules. It was they that carried on the trade in opium, before the arrival of the Portuguese, between the various sea-ports of the old Asiatic world.

It was probably by Mahomedan pilots that the ambassador of the Ming Emperor was conducted to the sea-ports of Arabia, Persia, and India in the voyage we find on record. It was through information given by Mahomedans residing as merchants at Canton that the Portuguese were known by the Chinese historians as *Faranggis* or Franks. It was because the Mahomedans wished to keep the profits of the trade in opium and other articles exclusively to themselves that they prejudiced the Chinese Governors of Canton and Fuhkien against the Portuguese, and induced them to refuse the liberty to trade. We need not be surprised, therefore, if later on the cultivators of the poppy in Yunnan, in the commencement of last century, were Mahomedans; they may have been simply the continuators of the Ming dynasty cultivation, or they may have commenced afresh with seeds brought from Burma.

Who cultivated the poppy in Yunnan.

29°.

In the year 1742 an Imperial work on medicine was published under the name "I-tsung-chin-chien." In this book, as a remedy for weak and injured lungs the capsules of the poppy are directed to be used, and ginseng and apricot kernels, together with seven other medicines, prepared in the form of a decoction, to be drunk warm. Mention is also made of a poppy ointment for scalds and burns. Fifteen poppy flowers are to be used, and if not to be had, capsules are to be taken instead

Use of capsules in 1742.

* The "Hsi-kuo-t'u-chih, chapter 52, tells us that in 1662 the duty on opium as a medical drug was *Tls. 3 a picul*, and that, besides this, *Tls 2 and 4 or 5 candarins* were collected at a later period on each parcel, without saying what a parcel was. It is added that on account of the growth of opium-smoking in the latter part of the eighteenth century the Viceroy of Canton petitioned the Emperor to prohibit the importation, which was done in 1796.

of them. A ditty of four lines in rhyme says that this ointment for burns and scalds is made with sesamum oil and poppy flowers or capsules mixed with water and boiled down; white wax and true calomel are added. When smeared on the part affected the pain at once subsides. There is also a remedy for ulcers and tumours in which the capsules are used. It is a powder formed of olibanum and *huang-ch'i* (*Sophora tomentosa* or, say some, *Platymiscia Sibirica*,* a labiate plant used as a tonic). A ditty of four lines, used as a recipe, says that olibanum and *huang-ch'i* may be used for persons of a weak constitution who are afflicted with painful tumours and ulcers; such tumours if they have not grown to their full size will be at once dispersed, and if they are already mature they will break. The roots of *tang-kuei* (*Aralia edulis*), *shao-yao* (*Paeonia albiflora*), ginseng, *Sophora tomentosa*, *ch'uan-hsiung*,† and *Ti-huang* (comfrey, i.e., *Symphytum*—Williams), together with olibanum, myrrh, poppy capsules, and liquorice, are used to make this powder, which is also useful for bruises, sprains, wounds, and fractures.

In addition to these recipes, there are several others in the same work which also contain the poppy capsules. They are omitted for brevity. At present in Pekin the capsules sold in drug shops are derived from the *Papaver somniferum*, cultivated at the town of An-su (near Pao-ting-fu), from Shansi, from Canton by sea, and from other places. They are bought and sold at the annual drug fair at Ch'i-chou, a city lying to the south-west of Pao-ting-fu.

30°.

An account of the "Hoppo Book" of 1753 has been lately prepared by Dr. Hirth and is printed in the "Journal of the China Branch of the Royal Asiatic Society" for the year 1882. The "Hoppo Book" is an explanation of the Custom House books in use at Canton in 1753; it was translated in that year, and contains varied information on the manner of settling the duties on all goods imported and exported at Canton. The author was an English merchant, whose name is not known. The division of the tariff is much the same as that of the present Chinese one, but imports and exports are not distinguished. Five kinds of taxes were then levied on foreign trade:—

- I. An import duty, according to a fixed tariff, payable on all merchandise imported.
- II. An export duty, payable on all exports, inclusive of re-exported goods proceeding to Ningpo and other ports on the Chinese coast; it consisted of a tariff charge of 6 per cent. *ad valorem*.
- III. Extra charges on exports and imports, such as for remitting the duty to Pekin, for weighers, linguists, &c., and for servants of the Board of Revenue.
- IV. Tonnage.
- V. Present.

The three books relating to the tariff at Canton which had then been authorised by the Board of Revenue at Pekin are partly translated in this work, which also contains the manner of settling duties then in use at the Port of Canton:—

- 1st. "Ch'eng-hsiang-ts'ê-li," or the book of true and fixed duties.
- 2nd. "Pi-li," or the book of comparisons.
- 3rd. "Ku-chia," or the book of valuation.

The first of these books was made A.D. 1687, and is kept as it was, unaltered. The book of comparisons was first sent, with about 150 articles collected together in it, to the Board of Revenue in Pekin, for approval, in the year 1733. After this time every two or three years additional articles were added and sent to Pekin for approval; so that this book was continually increasing.

The third book is a register of the value of all goods exported or re-exported from Canton, for the purpose of laying on them an extra charge of 6 per cent., to be added to the other duty on such exports and re-exports.

Here we are astonished to find that in 1755 a picul of silk could be valued at Tls. 100, and one of tea at Tls. 8; that white sugar was worth Tls. 1.50, brown sugar, Tls. 1, sugar candy, Tls. 2.50, rhubarb, Tls. 1.50, per picul; and that musk was valued at Tls. 1.50 per catty; while opium was not worth more than half an ounce of silver per catty. The value of a chest of opium would therefore amount at that time to not quite \$100. The existence of opium as an article of trade at Canton in

the middle of last century is certainly beyond doubt; it is also mentioned in the Kang Hsi tariff of 1687, and there pays a duty of three candareens per catty, constituting exactly 6 per cent. of the fixed value appearing in the valuation book.

31°.

In passing on to the year 1782 an extract may be here inserted from a letter, dated 7th July 1782, of an official nature addressed from China by Mr. Thomas Fitzhugh to Mr. Gregory in London. It was presented to Parliament, and is taken from the "Commons' Report," 1783, vol. vi.* "The importation of opium to China is forbidden on very severe penalties: the opium on seizure is burnt, the vessel in which it is brought to the port confiscated, and the Chinese in whose possession it is found for sale is punishable with death. It might be concluded that with a law so rigid no foreigners would venture to import, nor any Chinese dare to purchase this article; yet opium for a long course of time has been annually carried to China, and often in large quantities, both by our country's vessels and those of the Portuguese. It is sometimes landed at Macao and sometimes at Whampoa, though equally liable to the above penalties in either port, as the Portuguese are, so to say, entirely under the Chinese rule. That this contraband trade has hitherto been carried on without incurring the penalties of the law is owing to the excess of corruption in the executive part of the Chinese Government. . . . In the year 1780 a new Viceroy was appointed to the government of Canton; this man had the reputation of an upright, bold, and rigid Minister. I was informed that he had information of these illicit practices, and was resolved to take cognizance of them."

Opium smuggling in 1782.

32°.

England sent an Embassy in 1793, and China was minutely described by Barrow and Staunton. The habit of opium-smoking had then been slowly growing for 60 years. Singularly, they only say when speaking of it that many of the higher mandarins took opium; they do not describe the mode of smoking. Staunton says, "they smoke tobacco mixed with other odorous substances, and sometimes a little opium." Yet it cannot well be doubted that they referred to the habit of opium-smoking. In the geographical work called "Hai-kuo-t'u-chih" we are told that opium-smoking commenced only in the last years of the Emperor Chien Lung, that is, about 1790. The explanation of this statement is found in the fact that it was only then that the habit reached Pekin and became so general that public attention was called to it in Government documents. At about the same time the local authorities at Canton began to complain of rapid increase in the trade in opium. In 1800 there was an edict issued prohibiting opium from being brought to China in any ship. It was from this time that the more distinctly smuggling period commenced. It was a contraband trade, but connived at by Viceroys and Governors; they felt a difficulty, and concluded not to touch the evil with any firm intention to heal. How to treat it they knew not. The evil grew beyond their power of control. They regarded it as the "vile dirt of foreign countries;" they feared it would spread among all the people of the inner land, wasting their time and destroying their property; they advocated the prohibition of the trade, and the Government consented to their advice, and frequently issued prohibitory edicts, but too often some of the officials themselves smoked, or their nearest friends smoked, and so the hand of interference was paralysed; and the demand for opium continuing, the import was never seriously checked till the time of Lin Ts'ê-hsü and the war of 1841.

Opium-smoking in 1793.

In 1800.

33°.

In the geographical work "Hai-kuo-t'u-chih" the following remarks also occur. In the year 1796 a prohibitory edict was received, but the official authorities at Canton still allowed opium-receiving ships to anchor at Whampoa at a distance of only 4 English miles from the city. From this time smuggling proceeded year by year unchecked till 1822, when a local arrangement was decided on, according to the terms of which a charge was made of a regular amount on each chest; of this the officers, from the Viceroy downwards, whether civil

Statements in "Hai-kuo-t'u-chih."

Local arrangement in 1822.

* Williams's "Dictionary," page 346.

† Hsiung from Szechwan. Belongs to *Levisticum*.

* Quoted in "Poppy Plague," page 40, by J. F. B. Tinning

or military, at the port connected with shipping all received a share. Most of this went to the office of the superintendent. Some received it on board the ships, and others in the City of Canton. These sums were paid regularly month by month to the Chinese officers. In some cases opium itself was given, instead of silver, in large and small portions. On each occasion of this kind one or more chests would be given and sometimes as many as 150 chests. This irregular and illicit mode of proceeding lasted till the year 1840.

34°.

Native testimony on the deleterious effect of opium.

The following passage occurs in a botanical work, "Chih-wu-ming-shih-t'u-k'ao," published about 40 years ago :—"The poppy is not mentioned before the T'ang dynasty, A.D. 618 to 907. In the 'Pen-ts'ao' of the period 968 to 976 the poppy is placed in the lower division of cereal plants. In the Sung dynasty a decoction of poppy seeds was thought highly of, but at that time the medical efficacy of the capsules and seeds was understood to extend only, as being astringent, to the cure of diarrhoea and dysentery. In the Ming dynasty, 1368 to 1644, the pill called *I-li-chin-tan*, or golden elixir, came into use, and was found to be very deleterious if much was taken. Of late years opium has spread throughout the Empire—a universal poison. Its effects are as bad as those of the poisonous plant known by the name of *Tuan-ch'ang-ts'ao*, as producing internal rupture in the intestines. Yet as the guilt is not in the flower, it finds its place in botanical works on flowers."

35°.

Statistics of the present native production.

Mr. Donald Spence, British Consul at Ch'ung-ch'ing-fu, in Szechwan, in the year 1881, made inquiries

into the amount of opium produced at that time in the four south-western provinces. He states that in Szechwan the consumption of native opium within the province amounts to 54,000 piculs, while 123,000 piculs are sent to other provinces; of these, 70,000 piculs are exported in an easterly direction, 40,000 piculs paying duty, and 30,000 piculs being smuggled. Yunnan produces annually 35,000 piculs, and Kweichow 10,000 piculs, while Hupeh supplies to the market not more than 2,000 piculs. In all, the production of native opium amounts to 224,000 piculs. Mr. Spence's Report on the native production of opium was forwarded to the Foreign Office of the British Government, and was subsequently presented to Parliament and printed. If a comparison be made of the amount of opium produced in the four above-mentioned provinces, viz., 224,000 piculs, with the quantity of foreign opium imported in 1882, viz., 66,900 piculs, it will be seen that the opium of native production is more than three times as much in quantity as that introduced from India and elsewhere.

36°.

In Mr. Tinling's "Poppy Plague" there are 75 pages of closely printed information on the history of British opium, chiefly collected from the Parliamentary Papers of 1783, 1787, 1831, and 1840, and from the East India Company's Reports of 1812 and 1813. The present historical note is made up of information from the Chinese side and from Kämpfer, who is not alluded to by the authors of the "Poppy Plague" and "Our Opium Policy."

Concluding note.

INDEX.

Aden, 150.

A-fu-yung, old name of opium, 150.

Afyún (*afium*, *abyún*, *apyún*, *ofium*), 147, 154, 155.

Afyúni, 152.

Amœnitates exoticæ, extracts from, 153-155.

Amoy, tobacco plant, introduced from Philippine Islands, 153.

Opium-smoking in, 156.

Arabia visited by CH'ENG Ho, 150.

Arabs, their knowledge of the poppy, 147, 148.

At Canton, 148.

Uncle of MAHOMET buried at Canton, 148.

Two Arabian travellers, 148.

The Arabs as traders in 15th century, 150.

They grew opium in India in 16th century, 150...

The Arab national name for opium, 147.

Arabian method of obtaining opium, 150.

Aralia edulis (*tang-kuei*), 157.

Arsenic mixed with tobacco, 153.

Asafoetida, 151.

Atractylodes alba (*pai-shu*), 149, 151.

Bæhrs, 154.

Baghdad, 148.

BARBOSA, account of trade in opium, 150.

Batavia, 152, 155.

Bezoar, 151.

BONTIUS, a Dutch physician in Java, 152.

his opinion of opium, 153.

Burma, opium cultivation in, 156.

Calicut, 150.

Cambay, 150.

Canton, Superintendent appointed at, to overlook foreign trade, 148.

Official corruption on a large scale, 1822 to 1840, 157, 158.

Upright and bold Viceroy in 1780, 157.

New prohibitory edict in 1796 not obeyed by the Canton authorities, 157.

Another prohibitory edict in 1800, 157.

Capsule of poppy, called *mi-nang*, 148.

First medical use in 12th century, 149.

Use in dysentery, 149.

Use, whence derived, 149.

Use in North China in 12th and 13th centuries, 149.

Use in South China in 13th century, 149.

Use against diarrhoea and cough: "it kills like a knife," 150.

Use in 14th century, 150.

Use in 1742, 156.

Pricked for its juice in 1488, 150.

Pricked for its juice in 16th century, 150.

Process in preparing, 149, 150.

Ch'an-su, 155.

CH'EN TS'ANG-CH'I, 148.

CH'ENG Ho, voyage to Aden, 150.

Ch'êng-tu-fu, cultivation of poppy in, 148.

Chi (*Panicum miliaceum*), 148.

Chi-su-shui, 148.

Chi-yen-liang-fang, a work by NIEN HSI-YAO, 155.

Chien-kuang-t'a, 148.

Chih-wu-ming-shih-t'u-k'ao, a botanical work, 158.

Chiu-root, 149.

Chiu-huang-pên-ts'ao, a medical work of 14th century, 150.

- CHOU-TING WANG, 150.
 CHU CHÊN-HÊNG, writer on the poppy capsule, 150.
Chung-shu-shu, a work on trees, 148.
 Cigars, 154.
 Cochín, 150.
 Cochín China, trade with, 148.
Coconâr (*kôknâr*), Persian name for poppy, 147, 154.
 Comfrey (*Symphytum*), 157.
 Compass, floating, in 1122, 150.
 CORNELIUS NEPOS, story of poppy, 147.
 Coromandel coast, export of opium from, 150, 155.
Counterblast to Tobacco of King JAMES I., 153.
Crocus Indica, mixed with opium, 152.
 Curcuma, 152.
 Customs books at Canton: the tariff, the book of comparisons, the book of values, 157.
 DEFOE's reference to opium, 156.
 Drugs mixed with opium to modify the effect: putchuck, *Justicia*, *Boymia Rutecarpa*, 151.
 DUDGEON, Dr. discoverer of native account of opium-smoking in Formosa, 155.
 Duties of three kinds: tonnage, tariff, and supplementary, 151.
 On opium, 156, 157.
 East India Company, 156, 158.
Electuarium, 154.
Eleoococca verrucosa, 149.
Eudios, 154.
 FÊNG TZU-CHÊN, 150.
 FITZHUGH, Mr. THOMAS, 157.
Poloniâ (*poloniâ*), 154.
 Foreign trade prohibited, 151.
 Permitted, 151.
 Formosa, origin of opium-smoking in, described by HUANG YÜ-FU, 155.
 Injurious effects of opium-smoking in, 155, 156.
Galene, 154.
 GAMA, VASCO DE, 150.
 Ginseng, 149.
 Goa, 150.
Gobaar, 154.
 Golden elixir pill, 151, 152, 158.
 Greek name for opium, 147.
 GREGORY, Mr., 157.
Hai-kuo-t'u-chih has statements on opium, 157, 158.
 Duty on opium as a medical drug in 1662, 156.
 HAMI, 150.
Hamûk opium suicide, 155.
 Hangchow, superintendent appointed at, to overlook Foreign trade, 148.
 Happy inebriation, 154.
 HASSEM Begî, inventor of *Electuarium*, 154.
Hilare, 154.
 HIPPOCRATES knew the poppy, 147.
 HIRTH, Dr., account of *Hoppo Book*, 157.
 HOMER's use of the poppy, 147.
 Hookah or water pipe, 153, 154.
Hoppo Book, 157.
 Hormuz, 150.
Hsi-tsang-hung-hua, name of the India crocus, 152.
Hsiang-ku, a name of the poppy, 151.
 HSIEH K'ô, writer of a poem on the poppy, 149.
Hsiung (*Levisticum*), 157.
 HSÜ CHING, ambassador to Corea, 150.
Hsüan-ming-fang, a work by LIU HO-CHIEN, 149.
Huai-shêng-ssü, 148.
Huang-ch'i (*Sophora tomentosa*), 157.
Huang-lien (*Justicia*), 151.
 HUANG YÜ-FU, author of a work on Formosa, 155.
 Hupeh province, production of native opium, in 1881, 158.
Hyosciamus, 154.
I-chien-fang, a work by WANG SHIH, 149.
I-hsiao-ju-mên, a work by LI T'ING, 150.
I-li-chin-tan, 151, 152, 158.
 Used as an aphrodisiac, 151.
 Used to cure many ailments, 152.
I-lin-chi-yao, a work by WANG HSI, 150.
I-tsung-chin-chien a work on medicine, 156.
Iliad, reference to poppy, 147.
 Java, 155.
Justicia (*huang-lien*), 151.
 KÄMPFER, 149, 153, 154, 155.
 His work, *Amenitates exoticae*, 153.
 His account of tobacco, 153.
 Summary of his account, 154.
 His visit to Java in 1688, 155.
 Mention of opium-smoking shops and of use of opium, 155.
K'ai-pao-pên-ts'ao, 148.
 Kasan, 154.
Khaliaan (*khalium*), 154.
Khash-khash, Arabian name for poppy, 147.
Kheif, 154.
Kheifruus, 154.
Kôknâr (*coconâr*), 147, 154.
 K'OU TSUNG-SHIIH, medical writer on the poppy, 149.
Kuang-ch'ün-fang-p'u, a work on flowers, 149, 152.
 KUNG YÜN-LIN (KUNG Hsin), prescription by, 151.
 Recommended the use of the bracts of the poppy flower, 151.
 His work, *Wan-ping-hui-ch'ün*, 151.
 KUO T'ô-t'ô, author of *Chung-shu-shu*, 148.
 Kweichow province, production of native opium in 1881, 158.
Levisticum, 157.
Li-ch'ün-hua, a name of the poppy, 152.
 LI KAO, 149.
 LI SHIH-CHÊN's *Materia Medica*, 149, 151, 152.
 LI T'ING, author of *I-hsiao-ju-mên*, 150, 152.
 Described about 1550 the preparation of opium, 150, 152.
 LI T'ING, writer on divination and the *I-ching*, 150.
 LIN HUNG, a writer on poppy capsules, 149.
 LIN TSÊ-HSÜ, 157.
 LINDLEY, the botanist, 149.
 Liquorice, 149, 157.
 LIU HAN, 148.
 LIU HO-CHIEN, author of *Hsüan-ming-fang*, 149.
 LIU TSUNG-YÜAN, 148.
 LIVY, story of poppy, 147.
 Local arrangement of charges in 1822, 157.
Lung-ku, fossil bones, used with the capsule, 150.
 MA CHIH, 148.
Ma-tou-ling, 152.
 Mahomedans traded to China in MAHOMET's time, 148.
 In Chinese Turkestan, 150.
 In Yünnan, 156.
 Malwa, manufacture of opium in, 150.
 Manchu prohibition of tobacco-smoking, 153.

- Manila, the tobacco plant in, 153.
 Mariner's compass used in twelfth century, 150.
Materia Medica of eleventh century, 148.
 Medical use of capsules probably derived from the West, but this is not proved, 149.
 Of opium in sixteenth century, 150.
 Of opium in 1723, 155.
 Of poppy seeds, 149.
 Of poppy seeds to counteract the effects of the exorbitant use of mercury, 149.
 Medical writers in China first mention the poppy in eighth century, 148.
 Medicines mixed with poppy capsules are *tang-shên*, *pai-shu*, *asafoetida*, *putchuck*, *China-root*, *liquorice*, *cow bezoar*, 149, 151.
Mekon, Greek name of poppy, 147.
 Meliapur, 156.
 Mercury, use of, 148, 149.
Mesue, 154.
 "Millet bags," 148.
Mi-nang, name for poppy heads, 148.
 Ming dynasty mode of preparing opium, 150.
 Prohibition of tobacco-smoking, 153.
 Mithridate, 152.
 Musk, value of, in 1755, 157.
Nan-fang-ts'ao-mu-chuang, 148.
 Negapatam, 156.
Nepenthes, 154.
 NIFEN HSI-YAO, a medical writer in eighteenth century, mixed 13 drugs with opium, 155.
 Ningpo, Superintendent appointed at, to overlook Foreign trade, 148.
 Opium, a Greek word; its Latin form and Arab and Persian names, 147.
 Manufactured in Persia from the white poppy, 149.
 In Java in 1629, 152.
 In India in sixteenth century, 150.
 How made in Persia, 154.
 Taverns at Batavia, 155.
 Sale of, punished by death in 1729 and 1782, 156, 157.
 Deleterious effects as stated in *Chih-wu-ming-shih-i'u-k'ao*, 158.
 Importation prohibited in 1796, 156.
 Value of, in 1755, 157.
 Statistics of native production in 1881, 158.
 Opium-smoking arose from tobacco-smoking, 153.
 In Formosa and Amoy, 153.
 First opium-smoking shops, 155.
 In 1793, as described by Sir G. STAUNTON, 157.
 Opium-smuggling in 1782, 157.
 Orange peel taken with the capsule, 150.
Pachyrizus angulatus, 155.
Pæonia albiflora (*shao-yao*), 157.
Pæony, 152.
Pai-i-hsüan-fang, a work by WANG CH'U, 149.
Pai-shu (*Atractylodes alba*), 149.
Pan-yü-hsien-chih, 148.
Panicum miliaceum, 148.
Pao-yang-ling-kuei-shên-fang, 155.
Papaver somniferum, white and red varieties, 149.
 To be used for white and red dysentery respectively, 151.
 Peking, failure of efforts to check opium-smoking in, 153.
Pên-ts'ao-kang-mu, 149, 151.
Pên-ts'ao-yen-i, 149.
 Persia produced the white poppy in the sixteenth century, 149.
 How opium is made there, 154.
 Persian Gulf visited by the Chinese, 150.
 Persian national name for opium, 147.
Pharmacopæia mentions the poppy, 148, 151.
 Philippine Islands the source of Chinese tobacco-smoking, 153.
Philonium Persicum, 152, 154.
 Pill called *Wan-ying-tan* made of opium and 13 drugs, 155.
 Pipe for smoking tobacco through water, and object of invention, 153, 154.
 PISO, GULIELMUS, work published in 17th century, 152.
 Plaster called *Yü-chên-kao* made of opium and 16 drugs, 155.
Polonià (*folonià*), 154.
 Poppy as a flower, 147, 152.
 In Italy and Greece, 147.
 First cultivated in China in 8th century, 148.
 Second mention of cultivation, 148.
 Early poem on, 148.
 Other poems on, 149, 152.
 Poppy-milk fish, 149.
Poppy Plague, by Mr. J. F. B. TINLING, contains history of British opium compiled from official papers, 157, 158.
 Poppy seeds mentioned in *K'ai-pao-pên-ts'ao*, the *Pharmacopæia* of 973, 148.
 Portuguese become chief merchants in the East, 150.
 Introduced tobacco smoking into Persia, 154.
 Preparation of opium described by KEMPFER, 154.
 Described by LI T'ING, 1550, 150.
 Described by LI SHIH-CHÊN, 1578, 151.
 Described in the work *Wu-li-hsiao-shih*, 152.
 Triple preparation, 154.
 Prices ruling in 1755, 157.
 Prohibition of Foreign trade encouraged native production, 151.
 The Japanese raids caused the prohibitions, 151.
 Effect of prohibition seen in local lawlessness, 151.
 Prunes taken with the capsule, 150.
Plarmica Sibirica, 157.
Pueraria Thunbergia, 155.
 Punishment of death for sale of opium in 1729 and 1782, 156, 157.
Pust, 152.
Putchuck, 151.
 Quilon, 150.
 Seeds of poppy used in medicine, 152.
Shan-chia-ch'ing-kung, a medical work, 149.
Shao-yao (*Pæonia albiflora*), 152, 157.
Shih-po-ssü, Superintendent of Foreign trade, 148, 151.
Shun-hsiang-chui-pi, 153.
 Si-an-fu, cultivation of poppy in, 148.
 Smuggling regularly connived at by Viceroys and Governors from 1800 to 1840, when it was put down by LIN TS&H-SÜ, 157, 158.
 Soochow, tobacco smoking in, 153.
Sophora tomentosa, 157.
 SPENCE, Mr. DONALD, British Consul, statistics of native production of opium in 1881, 158.
 SU CH&E's poem on the poppy, 148.
 SU TUNG-PO mentions it, 148.
 SU SUNG, medical author on the poppy, 148.
 SU-TUNG-PO's poem, 148.
 SUNG YANG-TZÜ, 148.
Symphytum (comfrey), 157.
 Szechwan province, consumption of native opium in 1881, 158.
T'ai-hai-shih-ch'a-lu, a work on Formosa, 155.
T'ai-hai-ts'ai-fêng-t'ü-k'ao, a work on Formosa, 155.
 Taiwan, 155.
T'ai-wan-chih, 155.
Talmud of Jerusalem mentions opium as a dangerous medicine, 148.

- Tan-pu-kuei* (*tampaku*), a name for tobacco, 153.
Tan-t'ien, 155.
Tang-kuei (*Aralia edulis*), 157.
Tang-shên, (ginseng), 149.
TAO KUANG, efforts to put down opium-smoking, 153.
Tariff in Ming dynasty, 151.
TARQUIN, 147.
Tê-hsiao-fang, a work by WEI - I-LIN, 149.
Theriaak, 154.
Theriaki (*Theriacum*), 152, 154.
Thibet, opium cultivation in, 156.
Ti-huang (*Symphytum*), 157.
Ting-li, a cruciferous plant, 149.
TINLING, Mr. J. F. B., author of *Poppy Plague*, 157, 158.
Tobacco and tobacco-smoking, 153.
 When introduced, 153.
 Spread of, 153.
 In Soochow, 153.
 Smoked through a horn, 153.
 Smoked through a water pipe, 153, 154.
Tobak (*tabacco*, *tombak*, *tembakù*), 153.
Tonnage dues in Ming dynasty, 151.
Trade, good effects of permission to, 151.
 Foreign, prohibited 151.
 Foreign permitted, 151.
 Freedom in, led to local tranquillity and aided the funds required for the maintenance of a military force, 151.
 At Canton, Hangchow, and Ningpo, under a superintendent, 148.
 In the Ming dynasty, detailed in *Tung-hsi-yang-k'ao*, 151.
Ts'ao-hua-p'u, a work on plants and flowers, 152.
T'u-ching-pên-ts'ao, second *Pharmacopœia* of Sung dynasty, mentions the cultivation of the poppy, 148, 149.
T'u-shu-chi-ch'êng, 148, 149, 152.
Tuan-ch'ang-ts'ao, a poisonous plant, 158.
Tung-hsi-yang-k'ao, a Ming dynasty work on ocean trade, 151.
Tung-hua-lu, a historical work, 153.
Tung-i-pao-chien, a Corean work on medicine, 150, 151, 152.
 Describes the preparation of opium from the poppy capsule, 152.
Turfan, 150.
VIRGIL, use of the poppy, 147.
Wan-ping-hui-ch'un, a work by KUNG YÜN-LIN, 151.
Wan-ying-tan, made of opium and 13 drugs, 155.
WANG CH'U, author of *Pai-i-hsüan-fang*, 149.
WANG HSI mentions opium in *I-lin-chi-yao*, 150.
 Describes the preparation of opium from the capsule, 150.
 How he came to know the medical practice of the Mahommedans, 150.
WANG SHIH, author of *I-chien-fang*, 149.
WANG SHIH-MOU, author of a work on flowers, 152.
WEI I-LIN, author of *Tê-hsiao-fang*, 149.
Women smoked tobacco in 17th century, 153.
Wu-chu-yü, (*Boymia Rutacarpa*), 151.
Wu-li-hsiao-shih, 152.
Wu-tung, (*Eleococca verrucosa*), 149.
WU YU-P'EI's poem on the poppy, 152.
Ya-pien, a name for opium, 147, 156.
Yang-ch'i-shih, 155.
YANG SHIH-YING wrote on use of capsules in dysentery, 149.
Ying-kung, *T'ang*, *Pên-ts'ao*, 148.
Ying-su, poppy seeds, explanation of name, 148.
Ying-su-hua, 152.
Ying-tzu-su, poppy, 148.
Yü-mi, a name of the poppy, 151.
Yung-ch'ang-fu, opium grown in, in 1736, 156.
YUNG T'AO's poem on the poppy, 148.
Yünnan province, growth of opium in, 156, 158.

APPENDIX III.

Printed by order of the Royal Commission in accordance with the remarks at questions 492 and 493.

MEMORIAL presented by the ANTI-OPIUM SOCIETY in November 1892.

To the Right Hon. the Earl of Kimberley, K.G.,
President of Her Majesty's Council and Principal
Secretary of State for India.

MY LORD,

On behalf of the Society for the Suppression of the Opium Trade, we beg to lay before your Lordship the following considerations :—

1. Your Lordship is doubtless aware that, on the 10th of April, 1891, the House of Commons, by a majority of 31 votes, adopted, in principle, the following resolution, moved by Sir Joseph Pease, and seconded by Mr., now Sir Mark, Stewart :

This House is of opinion that the system by which the Indian opium revenue is raised is morally indefensible, and would urge upon the Indian Government that they should cease to grant licences for the cultivation of the poppy and sale of opium in British India, except to supply the legitimate demand for medical purposes, and that they should, at the same time, take measures to arrest the transit of Malwa opium through British territory.

We have good reason to believe that the recently-elected House of Commons contains at least as large a majority of members opposed to the continuance of the opium trade as the last, and that there is not the slightest probability of its reversing that vote.

2. The emphatic condemnation of the opium trade thus pronounced by the late House of Commons was the result of a widespread feeling amongst the thoughtful people of this country, and especially amongst the Christian Churches, hostile to the continuance of the opium trade at present carried on by the Indian Government. The public conscience is shocked, not merely by the sad and shameful record of the wars by which the legalisation of this traffic was wrung from China, but by the continuing fact that the British nation raises revenue wherewith to provide for the cost of governing India by trading in an article which is prepared for vicious use, which brings misery to countless myriads in China and other Eastern lands, and the sale of which, in our own country, is subject to restrictions based on its recognition by the entire medical profession as a dangerous poison. The repugnance of the British people to the whole system has been manifested, during the past three years especially, by several hundreds of public meetings, generally crowded, enthusiastic, and often influential and representative in a marked degree. At these meetings, resolutions condemning the trade have been adopted, almost always with absolute unanimity. During the session of 1891, 3,352 petitions were presented to Parliament for the suppression of the opium trade, bearing 192,106 signatures; 956 of these petitions being officially signed. Since the vote on Sir Joseph Pease's motion, memorials to Government, praying that speedy effect might be given to that vote, have generally taken the place of petitions; from the Wesleyan Methodist body alone memorials to this effect have been presented, bearing 271,630 signatures.

3. The late Government took some steps towards satisfying the public sentiment with regard to the opium traffic. In pursuance of declarations made by Sir James Fergusson (in the absence of Sir John Gorst), and the late Right Hon. W. H. Smith, in the course of the debate on Sir Joseph Pease's motion, it directed that the area under poppy cultivation in the Behar and Benares agencies should at once be restricted; and in accordance with such restriction the Government of India reduced the number of chests for sale in the current year from 57,000 (the number sold by auction at Calcutta during each of the four previous years) to 54,000 chests.* Your Lordship's predecessor, Viscount Cross, also sanctioned proposals made by the Indian Government, in response to a memorial presented

to him by this Society in 1890, for the abolition of licensed opium-smoking dens throughout India, and of the extremely objectionable "minimum guarantee" clause contained in the opium licenses used in the Presidency of Bombay.*

4. Whilst gladly accepting these measures of reform as steps in the right direction, we are unable to recognise them as satisfying the conscientious objections of the Christian and thoughtful people of this country to the existing system. The scope of these measures obviously falls far short of carrying out the resolution which the House of Commons has approved.

5. Under these circumstances, we have read with much satisfaction the observations with regard to the opium question made at Penicik, on the 11th of July last, by the Right Hon. W. E. Gladstone, now Her Majesty's Prime Minister. After referring to the earlier history of the opium trade, and to the disgraceful wars waged by this country with China, which resulted in the legalisation of the import of opium into that country, Mr. Gladstone is reported to have said :—

"There is still the growth of opium in India. There is still a considerable revenue, though not nearly what it was, connected with it, and there is considerable desire, I believe, in this country to get rid of that connexion altogether. I, gentlemen, can only say this, that subject to the obligations of good faith, I shall be most delighted to see, and even, if I can, to forward, any measure within the bounds of reason for limiting that connexion and bringing it, if it can be done, altogether to an end."

6. Accepting these utterances as representing the views of Her Majesty's present Ministers, we beg to submit to your Lordship the following suggestions as to the mode in which effect may best be given to them, and at the same time to the decision of the House of Commons. It will be convenient here to distinguish between the various branches of the opium trade, as they will require separate treatment.

These are :

- (1). The Bengal opium monopoly, under which the Indian Government grants licenses to cultivators in the Behar and Benares opium agencies for the cultivation of the poppy, makes advances to them without interest, purchases from them their entire crop, manufactures the poppy-juice into opium in the Government factories at Patna and Ghazipur, and finally sells the prepared opium by monthly public auction at Calcutta, except that portion which is reserved for sale by the Excise Department in India.
- (2). The Malwa transit duty system, under which, by arrangement of the Indian Government, opium grown and prepared in some of the native States of Central India pays to the Government of India, on its passage to Bombay for export, a heavy transit duty, equal to nearly two-thirds of the present wholesale price at Bombay; the revenue obtained from it by the native Princes being only a small percentage of that received by the Government of India.
- (3). The Excise system, under which the exclusive right of selling opium is farmed out to licensees, whose interest it becomes to increase the sale to the utmost possible extent, and to spread the degrading vices of opium-eating and opium-smoking amongst the people of India.
- (4). The system adopted in the Punjab of licensing the growth and preparation of opium for local consumption only.
7. As regards (1) the Bengal opium monopoly, we would urge upon your Lordship that the Indian

* Reply by the Hon. G. N. Curzon, M.P., to question put by Sir Joseph Pease, Bart., M.P., Feb. 25, 1892.

* Despatch of Viscount Cross to the Governor-General of India, dated December 17, 1891. [Blue Book, Consumption of Opium in India (1892, C. 8562), p. 108.]

Government should be instructed still further to reduce the area of poppy cultivation for the coming season, so as to limit the production of opium to that which medical use requires, and at once to stop the Government opium sales at Calcutta.* At the present time "a specially prepared article" is issued from the Government agencies to the Medical Department, which "takes the place" in India "of the European form of the drug." With this exception, opium is not prepared in India for medical use, but solely for sensual indulgence. There would, probably, be no serious difficulty in so treating the opium now in store as to adapt it for medical use; but, however this may be, it is plain that the mere fact that a certain amount of opium is in stock at Calcutta cannot affect the duty of a Christian Government, at once to withdraw from a traffic which it perceives to be immoral.

8. As regards (2) Malwa opium, we would point out that the present wide extension of poppy cultivation in the native States is due to the policy of the British Government itself. On this point the following statement is made by Mr. St. George Tucker,† of whom Dr. Medhurst tells us that, "Having, at the earnest solicitation of the Government, taken upon himself the management of the Indian finances, he rescued them from a condition of extreme jeopardy, and left them upon a respectable basis; subsequently he became a Director of the East India Company, and twice filled the important office of Chairman of the Direction." In a note handed by him to the Court of Directors, in 1829, Mr. Tucker says: "Ever since I had the honour of being a member of this Court, I have uniformly and steadily opposed the encouragement given to the extension of the manufacture of opium; but of late years we have pushed it to the utmost height, and disproportionate prices were given for the article in Malwa. We contracted burdensome Treaties with the Rajput States to introduce and extend the cultivation of the poppy. These Treaties were repealed about fifty years ago. At the present time, the native States‡ engage "so to manage their opium cultivation and production as to safeguard the British revenue; and, in exchange for this service, they receive either money compensation or other concessions." Under these circumstances, it is, we submit, clear that the same moral grounds, which can alone justify the existing prohibition of poppy culture in by far the greater portion of British India, require that Her Majesty's Government should prohibit the transit of opium from the Central States through British territory to the sea, except in the case of opium prepared for medical use. It would, however, be desirable, in our view, that the arrangements already existing between the Indian Government and the native States should be revised, in order that the restriction of the culture to medical requirements may be effected by a mutual prohibition, enforced alike in British India and in the Malwa States. The adoption of this course would relieve the Indian Government of the necessity of establishing a special service on the borders of these States to prevent the export, and would at the same time put an end to the smuggling of opium into adjoining British territories, which is already so serious an obstacle to the efforts of British officers to diminish the consumption of opium.

9. As regards (3) the Excise system, as it affects opium and other narcotic drugs, we simply ask that principles which have long been recognised in the legislation of the United Kingdom be applied for the protection of our fellow-subjects in India. Numerous petitions and memorials received from India during the past two years, great public meetings in many important Indian towns, which have been addressed by some of the most thoughtful and influential natives, and articles that have appeared in many organs of native opinion, alike give evidence that grave dissatisfaction is felt in India at the facilities offered by the existing system for the sale of these drugs. At home, under the Pharmacy Act of 1868,§ none of these drugs can be sold except by duly qualified druggists, and with a label showing them to be poisons; whilst the preparations of Indian hemp are classed amongst those dangerous poisons which may be sold only to persons known to the seller or introduced to him by some such person, entry being made in a register of the particulars

of each sale. As regards opium, the provisions of the law in force in this country are, we believe, generally considered by medical men to be insufficient, and their laxity has been condemned by coroners' juries; still less would they be suitable, in their present form, for the requirements of India. We would urge upon your Lordship to request the Indian Government without delay to prepare and adopt such regulations under the Indian Opium and Excise Acts as may be found best suited to adapt to the requirements of British India the fundamental principles, that the sale of poisonous drugs is to be restricted to medical and scientific use, and that discretionary powers for such sale should be entrusted only to responsible and carefully-selected persons, who possess adequate knowledge of the deleterious properties of these drugs, who can readily be called to account for any improper use of the discretion conferred upon them, and whose remuneration in no degree depends on the amount of their sales.

10. The case of Burma falls within the general principles, the adoption of which we have urged in paragraph 9. Six years ago, on the occasion of the annexation of Upper Burma, we presented to your Lordship a memorial deprecating the introduction of the Excise system, as regards opium, into that province. We then stated our views with regard to the two provinces very fully; and we have since had occasion to recur to the subject in our memorial presented to Viscount Cross on the 30th of July, 1890, paragraphs 10 to 13, and in another, dated March, 1892, paragraphs 8 and 9.* We notice that, since the date of our last memorial, Sir Alexander Mackenzie has replied to the despatch addressed to him by the Indian Government under date 29th July, 1891,† and we understand that in this reply he gave full reasons for adhering to his former opinion as to the desirability of prohibiting the sale of opium to Burmans, and further expressed a view in accordance with that which we laid before your Lordship's predecessor, that it was unnecessary and undesirable to make an exemption in favour of the Chinese residing in Burma. We sincerely trust that no further delay will be permitted in sanctioning throughout Burma the measures which have been so carefully elaborated by the Chief Commissioner, and which the officials and people of the province so earnestly and unanimously desire.

11. As regards (4), the Panjab system of licensing the cultivation, we would submit that this should be at once put an end to. The prohibition of poppy culture has been already enforced by the Indian Government, in 1799 as regards Lower Bengal and Orissa, as well as throughout Southern India‡; about 1860 in Assam§; and at other dates elsewhere. "The policy of Lord Cornwallis, Lord Teignmouth, Lord Wellesley, and Lord Minto, who circumscribed the produce within the narrowest limits, confining the cultivation of the "poppy to two of our provinces, and actually eradicating "it from districts where it had been previously cultivated,"|| was, no doubt, largely based on fiscal reasons; but it will hardly be contended that fiscal reasons can justify that which motives of morality, and the desire to protect our own subjects from an evil contagion would not warrant. We are assured by competent witnesses that the Sikh people would generally welcome the adoption by Government of measures which would enable them to rid themselves of a habit which they recognise to be a debasing and injurious one.

12. We are well aware that the measures thus indicated as necessary to give effect to the decision of the House of Commons, and to the convictions held by the great mass of thoughtful and Christian people in this country involve the abandonment by the Indian Exchequer of a still considerable, though steadily decreasing, revenue. Sir Joseph Pease, in the debate of last year,¶ expressed his willingness to accept the following addition to his resolution, which, however, the expiry of the time permitted for discussion precluded him from formally moving: "This House is of opinion that such annual grants should be made to the Government of India as the then probable amount of deficit, and the then circumstances of Indian finance seem to require." In so doing he represented the

* Return of Dr. Watt's article on opium, printed by order of the House of Commons, 1891, p. 7.

† Papers relating to the opium trade in China, 1842-1856, presented to the House of Commons, 1857, p. 54.

‡ Statement exhibiting the Moral and Material Progress and Condition of India, 1887-88, p. 8.

§ 31 Vict. c. 121.

* Blue Book, "Consumption of Opium in India," 1892, p. 110.

† *Ibid.*, p. 102.

‡ Return, Dr. Watt's article, p. 20.

§ Evidence of Sir C. Beadon: Report of East India Finance Committee, 1871, question 3524.

|| Mr. St. George Tucker: Papers relating to the opium trade in China, 1842-1856, presented to the House of Commons, 1857, p. 54.

¶ Reprint from Hansard's Report of the Debate, p. 12.

view repeatedly expressed by this Society, that the suppression of the opium trade must not be allowed to add to the taxation of the Indian people. We believe that the people of this country will be ready to make up any deficiency which, in the judgment of the responsible Government of the day, may be properly attributable to the withdrawal of the Indian Government from the export trade in opium, and which cannot otherwise be provided for except by placing fresh burdens on the peoples of India. At the same time, we are convinced that in many directions it is possible to introduce greater economy, combined with equal or even improved efficiency, into the administration of Her Majesty's Indian Empire—we would especially refer to the recommendations of the Simla Commission of 1879, on military expenditure, and to your Lordship's own suggestions contained in the Blue Book, "East India (Reduction of Expenditure), 1885." The development of Indian resources, on the lines pointed out by the Indian Famine Commission of 1881, has already produced a very gratifying increase in the revenue of India, and we believe that further attention to this important subject would in the course of a very few years, entirely fill up the void that must temporarily be occasioned by the cessation of the opium revenue from abroad. The withdrawal of the facilities now provided by Government for the consumption of opium in India itself would operate in the same direction; as Sir Charles Atchison's report on opium in Burma, supported by many other authorities, shows that the opium habit seriously interferes with the due cultivation and development of the land. The stoppage of the trade in opium with China would probably give a powerful stimulus to the exports of other Indian produce to that country, which already show a marked improvement in recent years, and would thus contribute materially to the prosperity of India. It would also, in all probability, have a very beneficial effect on silver exchanges, by putting an end to the drain of silver from China to India in payment for opium, thereby enabling the Chinese to substitute the use of silver for their present cumbrous copper coinage. It would thus tend to check the depreciation of silver which is at the present time so serious an embarrassment in the finances of India.

13. Whilst we have thus dealt in detail with the various branches of the opium question, we regard the immediate stoppage of the monthly auction sales of opium at Calcutta as by far the most important and pressing of the measures which we desire to urge upon your Lordship. These sales are a feature of the trade which has been admitted to be indefensible by some of the most eminent amongst Indian administrators, including the honoured names of Lord Lawrence, Sir Bartle Frere, Sir Herbert Edwardes, Sir Donald Macleod, and Sir William Muir. It is true that most of these favoured the substitution of a system in Bengal similar to that which exists in Bombay, a proposal to which we have frequently expressed our unhesitating opposition, and which the vote of the House of Commons, condemning both systems alike, has made it unnecessary now to discuss. It is, however, true, as these distinguished statesmen perceived, that the manufacture and sale of opium by Government itself is that which most strikingly and conclusively identifies the Indian Government with an immoral traffic. The total cessation of these sales could not fail to have the happiest results. To the people of India it would be a much-needed evidence that the British nation puts morality before revenue, and refuses to traffic in the vices of its subjects or of their neighbours. It would inevitably be followed by the Governments of other British settlements in the East which at present derive a large portion of their revenue from pandering to the vice of opium-smoking. To the Dutch Government of the East Indies, which prohibits the cultivation of the poppy in its own territories, but which follows the evil example of British rule by deriving a great revenue from the sale to its own subjects of opium, purchased chiefly in India, it would facilitate the withdrawal from a pernicious system which is working havoc throughout the Island of Java. Above all, to the great Chinese people such a withdrawal would be a token that we have at last truly repented, as a nation, of the grievous wrongs which we have inflicted upon them—wrong which, by a strange inconsistency, are often frankly admitted by statesmen who yet see no objection to our continuing to reap the profits of a trade which our cruel and unjust wars originally forced upon the Chinese.

14. In China, the results to be anticipated from the stoppage of the export trade in opium from Calcutta

and Bombay are thus stated in a letter received by us, about a year ago, from one of the most competent and experienced observers, the Rev. Griffith John, D.D., of the London Missionary Society, who has been for upwards of 35 years a missionary in the great commercial centre of Hankow.

"Let China see that we are capable of sacrificing millions of pounds annually for her good, and that of our own free will, in obedience to the dictates of conscience and from a sense of humanity, and she will not be slow to acknowledge the worth and dignity of the act. Nay more, she may begin to glorify God in us. Our intercourse with the people would become more friendly; commerce would extend and develop; one of the greatest obstacles to the progress of Christ's kingdom in the land would be removed; the people would listen more respectfully to our message; and the day of China's regeneration would begin to dawn. Many obstacles would still remain, but having got rid of this we should feel that we could face the rest with hearts light and brave. We should then begin to hope for old Cathay as we have not ventured to do hitherto.

But have the Chinese the ability to put down the vice? As long as the Indian trade in opium exists the hands of the Chinese Government are tied and paralyzed. They can simply do nothing, but allow things to go on from bad to worse. Their best efforts, however sincere and energetic, would prove abortive. If the Indian trade in the drug were abandoned the Chinese would, I firmly believe, make an honest effort to stop the native growth, and the attempt would eventuate at once in a diminution of the evil. It might eventuate ultimately in its complete suppression.

But whether the Chinese Government can put down the native growth or not, our path as a Christian nation is plain enough. It is for us to wash our hands clean of the iniquity. The trade is immoral and a foul blot on England's escutcheon. It is a disgrace to ourselves as a people and unworthy of the place which we hold among the nations of the earth."

Similarly the Rev. Christopher C. Fenn, one of the secretaries of the Church Missionary Society, who is and has for many years been connected more particularly with the work of that Society in China, writes as follows in the "Church Missionary Intelligencer" of March last:—

"It will be known throughout China—for there are Protestant missionaries in almost every province—that the import of opium from India to China is stopped; and it will be very widely known also that in taking that step England has sacrificed considerable pecuniary gain. Every British official in China will henceforth feel it his duty to discourage, as far as his influence reaches, the growth, supply, and the consumption of opium, in order to promote both the admission of other English and Indian commodities, and also the production of those articles which can be exchanged for such commodities. Every Chinese official, from the highest to the lowest, will know that the most stringent and strenuous efforts to put down the growth and import of opium will never be in any way thwarted by the British Government, or tend in the smallest degree to embroil the friendly relations between England and China. Many of these will be disposed to take vigorous measures to stop the terrible evil, being encouraged to do so by the overwhelming majority of their own countrymen. It is impossible to believe that any check to such measures will be applied by the central Government. The chief authorities will not dare, whatever their own desires may be, especially when, as now, discontent is widely spread, thus to defy public opinion. May it not be hoped that before many months are passed—say within three or four years—the anti-opium feeling will have gradually become so strong as to sweep all before it. There is in China no dislike to paternal Government action. On the contrary, for this purpose at least, it will be earnestly asked for, and firmly and successfully applied. The cancer that has been eating into the vitals of Chinese life will be torn out; and once again, in many places, a population morally and physically vigorous, will be ready to "receive the engrafted Word." A powerful stimulus will be given to the desire for friendly intercourse with Western Nations; prejudice against European civilization and inventions will be removed; the construction of railways will be encouraged; a free interchange will be established of the products of British and Chinese industry; and two mighty and peaceful empires, linked together in commerce and amity, will bestow on each of them an effectual barrier against northern aggression. The message of salvation will once again resume its

westward course. America will be stirred up to a holy and generous emulation. From the western shores of that continent and by railway across its northern hills and plains, thousands of ardent evangelists from the British Isles, from the United States, from the Canadian Dominion, with the Gospel in their hearts and on their lips, will speed forward, with the sun, to the abodes of this ancient but still vigorous nation, will supply the lamentable defects of the noble but mournful teaching of Confucius, and will sow seeds of Divine Truth, that may grow up in a soil still strange to it, and yield at length some new proof of its transforming power, to

the glory of Him who is Truth and who is Love. 'Glory be to God in the highest; on earth peace, good-will towards men.'

We can desire no greater honour for your Lordship and for the Government of which you are a member, than that you may be the instruments in the Divine hands of bringing about so blessed a consummation.

We are, with great respect,

Your Lordship's obedient servants,

(Signed, on behalf of the Society for the Suppression of the Opium Trade),

JOSEPH W. PEASE, *President.*

J. C. LIVERPOOL (Bishop).

JOHN SARUM.*

J. W. CARLIOL.*

[* As regards the general matter of the Petition, not as regards all its expressions.]

A. COTTON, General R.E., Madras.

F. B. MEYER.

W. F. MOULTON.†

[† With some reserve as to paragraph 9.]

MARK J. STEWART.‡

[‡ Approves generally, except as to the fourth sentence of paragraph 12.]

BASIL WILKINSON.

DONALD MATHESON, *Chairman.*

H. W. MAYNARD, *Treasurer.*

GEORGE GILLET.

HENRY GURNEY.

T. HANBURY.

JOHN HILTON.

NICHOLAS HURRY, Member of Board of London Congregational Ministers.

JAMES LEGGE, Professor of Chinese, University of Oxford.

DAVID McLAREN, J.P., D.L., Ex-Chairman of the Chamber of Commerce, Edinburgh.

GEORGE PIERCY.

SAMUEL SOUTHALL.

W. S. SWANSON, D.D.

C. W. TREMENHEERE, Lt.-Gen.

HENRY WIGHAM.

ROBT. PRINGLE, M.D., Brigade-Surg., H.M.'s Bengal Army, *Deputation Secretary.*

JOSEPH G. ALEXANDER, *Secretary.*

ARTHUR ALBRIGHT.

JOSEPH ANGUS, M.A., D.D.

THOS. J. BARNARDO.

JOHN BARRAN.

(REV.) GEORGE S. BARRETT, Norwich.

ALFRED HENRY BAYNES, Genl. Sec., Baptist Missionary Society.

HENRY J. BERGUER, Vicar, S. Philips, Arlington Square, N.

W. BICKFORD-SMITH.

J. B. BRAITHWAITE.

H. BROADHURST.

HENDERSON BURNSIDE.

W. S. CAINE.

GORDON CALTHROP.

SIR WILLIAM T. CHARLEY, Q.C., D.C.L.

A. M. W. CHRISTOPHER, M.A., Rector of St. Aldate's, and Hon. Canon of Christ Church, Oxford.

WILLIAM S. CLARK.

F. C. CLAYTON.

J. J. COLMAN.

J. LLEWELYN DAVIES.

JOHN EDMOND, D.D.

J. PASSMORE EDWARDS.

CHRISTOPHER C. FENN.

THEODORE FRY.

JAMES P. GLEDSTONE.

BENJAMIN GREGORY.

H. GRATTON GUINNESS, D.D.

F. T. HAIG, Major-General.

DAN. BELL HANKIN.

WM. HARVEY, Ilkley.

ALFRED HOWELL.

ISAAC HOYLE.

HENRY SCOTT HOLLAND, § Canon of St. Paul's.

[§ To the general intention of the Petition.]

THOS. HUGHES, Q.C., Judge of Circuit No. IX.

SAMUEL HULME.

ALFRED ILLINGWORTH.

E. E. JENKINS.

A. MCARTHUR.

JUSTIN MCCARTHY.

ALEX. McLAREN, D.D., Union Chapel, Manchester.

JAMES E. MATHIESON.

W. C. MAUGHAN, Hon. Sec. Glasgow Auxiliary.

H. C. MILWARD, Vicar of Lyonshall (late Vicar of Redditch).

W. MORGAN, Bryn-golen, Shawford, near Winchester.

H. C. G. MOULE, M.A., Principal of Ridley Hall, Cambridge.

G. S. MUIR.

ARTHUR PEASE.

WM. T. RADCLIFFE.

J. J. RIDGE.

FREDK. SESSIONS.

THOMSON SHARP.

H. C. SQUIRES.

T. ALFRED STOWELL, M.A., Rector of Chorley, and Hon. Canon of Manchester.

JOSEPH STURGE.

JOSEPH THOMSON.

J. F. B. TINLING.

H. W. WEBB-PEPLOE, Vicar of St. Paul's, Onslow Square, S.W.

S. D. WADDY.

BENJ. WHITWORTH, J.P.

PHILIP H. WICKSTEED.

JOHN WILSON, M.P. (Govan).

Vice-Presidents.

Members of the Executive Committee.

Members of the General Council.

APPENDIX IV.

CORRESPONDENCE with the FOREIGN OFFICE concerning the operation of existing Treaties with China in regard to the importation of opium into China and the duty thereon, as bearing on the declaration made by the Right Honourable Sir James Fergusson, on behalf of Her Majesty's Government, in the House of Commons, on the 10th April 1891. (*See Questions 252 and 253.*)

SIR, 15th September 1893.
I AM directed by the Chairman of the Royal Commission on Opium to ask you to lay the following matter before the Right Honourable the Secretary of State.

On the 10th April 1891, Sir James Fergusson, speaking in the House of Commons on behalf of Her Majesty's Government, is reported by Hansard to have said:—

"The Chinese at any time may terminate the treaty on giving 12 months' notice, and to protect themselves

they may increase the duty to any extent they please, or they may exclude it altogether. This, I think I may say, that if the Chinese Government thought proper to raise the duty to a prohibited extent, or shut out the article altogether, this country would not expend one pound in powder and shot or lose the life of a soldier in an attempt to force the opium upon the Chinese."

More than one of the witnesses brought forward by the Anti-Opium Society has stated before the Royal Commission that China is not really free to take her

own course in this matter. In order that the position may be clear, I am directed to forward extract from proof of the evidence given by Dr. Maxwell on the subject.

Lord Brassey would not himself desire to go behind a statement made in Parliament by a member of the Government, speaking on behalf of the Government, on a question of this kind. Still, as the doubt has been raised, perhaps Her Majesty's Government would desire it authoritatively to be set at rest. The statement, made by Sir James Fergusson in April 1891, has been on occasions referred to in Parliament; and it was cited in the debate of the 30th June last in the House of Commons.*

It has been suggested to the Commission that the statement quoted above from Sir James Fergusson's speech consisted of two parts. In the first sentence he referred to the additional article of the Chefoo Convention† which can be terminated at 12 months' notice by either party. On the termination of that article the regulations under the Treaty of Tientsin are revived, and by those regulations "transit‡ dues on "it (opium) will be arranged as the Chinese Government see fit." The second sentence declares the policy which will guide Her Majesty's Government if or when China raises the question in the future.

The Royal Commission on Opium would be glad if you could favour them with an authoritative statement upon the question that has been raised.

I am, &c.

(Signed) C. E. BERNARD,

Acting Secretary to the Commission.

To the Under Secretary of State
for Foreign Affairs.

Foreign Office,
September 25, 1893.

SIR,
I AM directed by the Earl of Rosebery to acknowledge the receipt of your letter of the 15th instant and to transmit, for the information of the Royal Commission, copy of a memorandum drawn up in this Department giving information respecting the treaty engagements between this country and China on the subject of the importation of opium.

I am, &c.

(Signed) T. V. LISTER.

Sir C. E. Bernard.

MEMORANDUM respecting the TREATY ENGAGEMENTS between this Country and China on the subject of the Importation of Opium.

There is no mention of opium in the Treaty of Tientsin of the 26th June 1858, or in the previous Treaty of Nanking which was thereby confirmed.

The Treaty of Tientsin declares that British subjects shall pay on all merchandise imported or exported by them the duties prescribed by the tariff, subject, however, to most favoured nation treatment.

It declares further that (inasmuch as the tariff fixed under the Treaty of Nanking was no longer equitable) the tariff shall be revised so that it shall, as revised, come into operation immediately after the ratification of the Treaty.

It was further agreed that either of the contracting parties might demand a further revision of the tariff and of the commercial articles of the Treaty at the end of 10 years; but that if no such demand was made within six months after the end of the first 10 years, then the tariff should remain in force for 10 years more, and so on at the expiration of each 10 years.

With regard to transit dues it was declared that the Chinese authorities should declare, within a period of four months, the amounts leviable, which should be fixed as nearly as possible at the rate of 2½ *ad valorem*.

In pursuance of Article 26 of the above Treaty an agreement was signed by Lord Elgin and the Chinese Plenipotentiaries on the 8th November 1858, which contained rules and regulations in explanation of the Treaty, and to which a revised tariff was attached.

It was therein declared that the said tariff and rules should be "equally binding on the Governments and "subjects of both countries with the Treaty itself."

Rule 5. "Regarding certain commodities heretofore contraband" relating, among other articles, to opium, ran as follows:—

The restrictions affecting trade in opium are relaxed under the following conditions:—

"1. Opium will henceforth pay 30 taels per picul import duty. The importer will sell it only at the port. It will be carried into the interior by Chinese only, and only as Chinese property; the foreign traders will not be allowed to accompany it. The provisions of Article 9 of the Treaty of Tientsin, by which British subjects are authorised to proceed into the interior with passports to trade, will not extend to it, nor will those of Article 28 of the same Treaty by which the transit dues are regulated: the transit dues on it will be arranged as the Chinese Government see fit; nor in future revisions of the tariff is the same rule of revision to be applied to opium as to other goods."

In the tariff annexed to this Agreement opium is included with an import duty of 30 taels per 100 catties.

In the Chefoo Agreement of 13th November 1876, section 3, relating to trade, it is declared that foreign concessions at the ports are to be regarded as the area of exemption from *li-kin*.

The 3rd subsection of section 3, relating to opium, is as follows:—

"On opium Sir Thomas Wade will move his Government to sanction an arrangement different from that affecting other imports. British merchants, when opium is brought into port, will be obliged to have it taken cognizance of by the Customs and deposited in bond, either in a warehouse or a receiving hulk, until such time as there is a sale for it. The importer will then pay the tariff duty upon it, and the purchasers the *li-kin*, in order to the prevention of the evasion of the duty. The amount of *li-kin* to be collected will be decided by the different provincial Governments according to the circumstances of each."

On the 18th July 1885 an additional article to the Chefoo agreement was signed in London, amending the above stipulation as to opium, and the agreement, together with the additional article, was ratified on the 6th May 1886.

In lieu of clause 3. of section III. of the Chefoo agreement, it was arranged (by the additional article) that foreign opium when imported into China should be taken cognizance of by the Imperial Maritime Customs and should be deposited in bond and not removed thence until there should be paid to the customs the tariff duty of 30 taels per chest of 100 catties, and also a sum not exceeding 80 taels per like chest as *li-kin*.

The opium might then be re-packed, a certificate should be issued gratuitously to the owner which should free the opium from any further tax or duty whilst in transport to the interior provided that the packages had not been opened or the Customs seals, &c. tampered with.

These certificates were to have validity only in Chinese hands, and should not entitle foreigners to accompany the opium inland.

On the opening of the packages at their destination the opium should be treated, in respect of taxes or contribution, as native opium, in calculating which taxes the *li-kin* should be deducted from the market value.

This arrangement was to remain binding for four years, after which either party might give 12 months' notice to terminate it; and in the event of its termination the arrangements under the regulations attached to the Treaty of Tientsin (1858) should be revived.

The contracting parties might by common consent adopt modifications of the additional article which experience might show to be desirable.

In an exchange of notes, dated 18th July 1885, it was stated that if the Chinese Government failed to bring the other Treaty powers to conform to the provisions of the additional article, Her Majesty's Government might at once withdraw from it, and revert to the previous system of taxation.

The object of this was no doubt to protect the British flag, as, if the foreign Governments did not agree, British merchants could import under foreign flags.

The present position of the question appears to be—

That British merchants may import opium on payment of a duty of 30 taels per 100 catties, and that opium so imported shall remain in bond until that duty

1 picul =
100 catties.

China No. 3
(1886),
p. 3.

p. 4.

p. 5.

Mem., Sept.
19, 1893.

Art. 24.

Art. 26.

Art. 27.

Art. 28.

* Hansard for 30th June 1893, page 604.

† Page 7 of Command Paper, No. 4735 of 1886.

‡ Page 11 of Parliamentary Paper of 1861, on "China Treaties."

is paid with the addition of a li-kin not exceeding 80 taels per 100 catties.

That these payments shall frank the opium to the place of consumption, where no further tax shall be levied than is payable on native opium, the amount paid as li-kin being calculated off the value.

That this arrangement may be terminated by either party by giving 12 months' notice.

That Her Majesty's Government may moreover terminate it at once, if the other Treaty Powers do not conform to its provisions.

That in the event of its termination the importation of opium shall be regulated by the conditions attached to the Treaty of Tientsin, namely :—

Import duty, 30 taels per picul, with transit dues as Chinese Government shall see fit, &c. 1 picul = 100 catties,

A. H. OAKES,

Foreign Office,
September 19th, 1893.

APPENDIX V.

EXTRACTS from the MINUTES of EVIDENCE given before the ROYAL COMMISSION ON ALLEGED CHINESE GAMBLING AND IMMORALITY AND CHARGES OF BRIBERY AGAINST MEMBERS OF THE POLICE FORCE, appointed August 20th 1891. Presented to the New South Wales Parliament by command. Sydney Charles Potter, Government Printer, 1892.

[Put in by Sir George Birdwood as part of his evidence, and ordered to be printed.]

HANNAH, examined 10th December 1891.

13,760. Do you smoke opium?—I have smoked it, but I was very sick and had to knock it off. Now and then I have a couple of pipes unbeknown to my husband.

13,763. Is it not a difficult matter to break yourself of the habit?—I do not know. I think it is easy enough to knock it off.

ADELAIDE, examined 10th December 1891.

13,830. Do you smoke opium?—No; I did at one time, but have not for four years. It did not agree with me.

13,835. If you smoke opium continuously, does it not destroy the vitality and energy, and make you feel altogether unfit for any ordinary duties?—It does to a certain extent.

13,836. Does smoking opium render you unconscious so that you would be absolutely at the mercy of anyone who would be in the room with you?—No, it does not.

13,837. You have your senses about you the whole time?—Yes.

13,840. Which has the greater effect on you, drink or opium?—Drink certainly.

ELLEN, examined 10th December 1891.

13,892. Do you smoke opium?—I do.

13,893. Constantly?—Yes.

13,894. When did you first commence?—About three years ago.

13,919. You do not drink?—No.

13,920. Does opium smoking have the same effect as drink, do you know?—No; it has no effect.

13,921. When you smoke opium does it render you unconscious?—No.

13,922. Why not give it up now?—I cannot. It is part of myself to smoke it.

13,941. How much opium do you use in a day?—Sometimes 2s. and sometimes 1s. 6d. worth.

13,942. Do most of the European girls who go with Chinamen use opium?—Yes; the most of them do, I think.

13,943. Do those who use opium as you do take intoxicating drink?—No; I have not seen two women who smoked opium drink as well. I used to drink terribly myself before I took to opium.

13,965. Could any man take advantage of you when you were under the influence of opium?—No one in the world could.

14,010. Do you not think opium smoking is a great evil?—No, I do not think so. A woman that smokes opium has always got her senses about her.

14,011. Do you not find that it takes away all your energies, and makes you poor in health and thin?—No, I have not altered in the least since I have smoked; in fact, I am stouter.

ELLEN, examined 14th December 1891.

14,555. If men smoke opium, does it affect their power with women?—Yes, it does, in one way.

14,556. They have not the same desire for intercourse with women?—No; they do not care about women.

14,557. If you were lying down on a bunk smoking opium alongside a Chinaman who was also smoking opium, the probability is that he would not care to have intercourse with you?—Not if he had the opium habit, he would not. The man who has the opium habit is not like another man; he does not care for women.

14,620. How often during the day do you smoke opium?—Three times.

14,623. For how long after you have had your smoke does the effect remain in your system?—As soon as I have a few pipes I feel all right again.

14,624. How much opium does it take to put you properly under the influence for the time being?—It takes 6d. worth for the time being, but I always smoke 1s. worth.

14,626. Are you not in that state even partially unconscious?—Not at all.

14,627. Does it not do so with others?—It never makes anyone unconscious.

14,628. Are you quite sure?—Well, I can speak for myself. I can smoke opium all day and night too, and it will have no such effect upon me.

14,634. It is a rule that persons who smoke opium do not care for drink?—Yes; as a rule they do not care for drink. It will never do for the two things to go together.

14,643. Does not opium smoking render you unfit for work?—No; as soon as I have a smoke I am all right.

14,644. Does it not affect your appetite?—No; I can eat far better than I could before.

14,650. Would it not be better for you to break yourself of the habit?—It might be better for me to break off a certain amount, but if I were not to smoke I daresay I should be on the streets. I have no desire to go out now.

14,651. It kills all lustful inclination?—Yes.

MARGARET, examined 14th December 1891.

14,819. Is it a fact that opium smoking will make you so unconscious that you do not know what people are doing to you?—No. It has never done so to me.

14,820. You always know what men are doing about you?—Of course. It never made me stupid at all.

14,826. Does the habit of opium smoking in men kill the desire for sexual intercourse?—Nobody has said anything to me like that.

14,849. How much opium do you smoke?—About 2s. or 2s. 6d. worth a day.

14,850. How many years have you been smoking opium?—Five years.

14,880. Do girls that smoke opium also drink liquor?—I never saw a heavy opium smoker drink.

14,882. What would you consider heavy opium smoking?—5s. worth a day would be heavy.

14,886. And you say opium smoking does not make you stupid?—No; it does not.

14,938. This opium smoking has a terrible power over you when you take to it?—Yes. It is very hard to knock it off, although there are Chinamen who have been smoking for 20 years, and have knocked it off.

14,939. Does opium smoking have a tendency to make a person lustful?—No. It makes them the other way. They have no inclination at all, when they smoke very heavy.

14,961. With regard to opium smoking, do not you think it will injure your health if you persist in it?—It has never interfered with my health.

14,982. Have you heard that one effect of using opium is to destroy the appetite for intoxicating drinks?—I have heard of cases where heavy drinkers have taken to opium, and have never thought of drinking afterwards.

MINNIE, examined 14th December 1891.

15,022. Do you smoke opium?—Not now; I used to.

15,023. How long ago is it since you stopped?—About 10 months ago.

15,024. How long had you been smoking up to that time?—Very nearly three years.

15,025. How much opium per day did you smoke?—3s. or 4s. worth.

15,030. Now, what effect has opium smoking upon you?—It is a habit; that is all.

15,031. I know that it must have some effect. Now, what I want to know from you is, the effect of opium;

does it make you dream, or ardently desire anything, or does it make you simply stupid and helpless?—It has no more effect upon me than an ordinary smoke.

15,038. The opium destroys the desire for strong drink?—Yes. It seems to quieten you altogether. There is no desire to go out and about, or anything, unless a person happens to be of a very lively disposition.

15,056. Opium never made you unconscious?—No.

PAULINE, examined 14th December 1891.

15,294. When you have had your opium smoke, are you conscious of what is going on?—Certainly.

15,295. It does not make you unconscious so that a man could do anything with you and you not know it?—No, you cannot be drugged with opium.

15,296. Is it a fact that men who smoke opium have no desire to have any connexion with women?—Quite right, they do not.

15,297. Now I want you to describe to the Commission what is the effect of a good strong smoke of opium?—It does not affect you in any way.

15,303. Supposing it has been stated by a person who visited one of these opium-smoking houses that he saw two or three girls there, only one of whom was conscious, and that after trying to wake the other girls, on questioning the one that was awake, she explained that they were under the influence of opium, and it would be no use trying to wake them for two or three hours; what would you say to such a statement?—Well, they might have been drinking. Opium would not do that.

15,306. How often do you smoke?—Three times a day. That is to say, I used to when I was smoking much.

15,307. What did it cost you?—2s. 6d. a day.

15,308. What does it cost you now?—It costs me 6d. a day. I have been knocking it off for three months.

APPENDIX VI.

MEMORANDUM on CULTIVATION of the POPPY and PRODUCTION of OPIUM in CHINA, put in by Sir THOMAS WADE, when before the INDIAN OPIUM COMMISSION, 15th September 1893, in answer to Question 1286.

[The Paper was originally prepared for submission to the Hong Kong Branch of the Royal Asiatic Society, in 1847, but was never read.—T. F. W.]

The poppy, called in Chinese the *ying-suh hwa*, or the *li-ch'un hwa*, is said to be cultivated in the provinces of Yün-Nan,* Sz' Ch'uen, Kwang-Si, Kwang-Tung, Kwei-Chan, Hu-Nan, Hu-Pih, Cheh-Kiang, and Fuh-Kien. It grows wild in Kan-Suh. In Yün-Nan it is planted on the rice-grounds in the tenth moon (October, November), and is cut in the third of the ending year (April, May). A Chinese acre, cultivated in this manner, yields some twenty dollars, and about one hundred if exclusively devoted to the poppy. The colour of the blossoms is yellow, white, and brown. The smell and taste of the drug manufactured from it differs in different provinces; the best being produced in Lan-chau, in Kan-Suh. This is strongest in flavour, and nearly as good as the imported opium. In Kwang-Si, near Hwui-chau, and in the prefectures of Nan-hung, and Shau-kink, in the province of Kwang-Tung, some tolerable opium is manufactured, but that of the other provinces is inferior. The poppy may be planted at any time of year, the best positions being near sandy ground. It attains a height of two or three feet, and the juice is extracted as soon as the pods, which hang in bunches and are of different sizes, are formed.

The following is described to be the process in Yün-Nan and Kwang-Tung. The person employed to collect the juice proceeds to the ground with a large

joint of bamboo girt in front of him. In this is bent a copper tube about a Chinese foot in length; the pointed end of this is thrust into the pod, the other resting in the bamboo vessel, into which the juice descends through the tube. The pod which is now pressed and shrunk is hereupon closed, and may be used again when it has recovered its full size. The juice so collected is thrown into a large earthenware vat, which is sunk in a pit boarded over and covered with earth a few inches deep. For every catty of liquid there is thrown into the vat $\frac{3}{100}$ or $\frac{5}{100}$ of arsenic; the quantity being smaller as the flavour of the juice is stronger; and the strength will depend upon the province in which the plant is grown. Once in ten days the boards are removed from the mouth of the vat, and the pit is exposed to a night's dew, and covered up again. It lies in this way for about two months, and is then made up into paste, which can be heated for use.

In some instances the syrup is mixed with red earth, in which case the proportion of arsenic must be doubled, and the vat must not be exposed to the dew; but the boards should be felt with the hand in about a month, and if found warm the paste is in a fit condition to be made up. If they be not so, the pit should be opened, and the liquid examined. It is eventually made up in balls and sold like foreign opium.

The flavour of the drug varies according to the soil in which the poppy is grown, and the skill of the maker, but there does not appear to be any fashionable preference for that produced in any particular locality. In the district of Yang-shau and Hwang-ni of

The orthography of the Chinese terms referred to in this Paper is that used by Dr. Wells Williams in his Work, "The Middle Kingdom." T. F. W.

the prefecture of Shau-king, in the province of Kwang-Tung, women are much employed in the manufacture. The crop in Kwang Tung was said to be in 1847 from 8,000 to 10,000 piculs, so vastly has the quantity produced increased since Commissioner Lin's proceedings in 1839. The best quality sells for about 500 dollars per picul in Canton, the inferior for half that sum. The native drug is said to be most consumed in Kwang-Tung, Kwang-Si, Sz'-Ch'uen, Kwei-Chau, and Shen-Si. It resembles Patna in smell, is not equal to Bengal in strength, it is mixed with Patna and Turkey, but not Benares. When two years old it is preferred by some smokers to any foreign drug.

At Ting-chau Fu, in the south of Fuh-Kien, the white poppy is much grown; the neighbouring districts are thence supplied with native opium, some of which finds its way even to Fuh-chau (Foochow). It costs 300 or 400 cash the tael, but is weak in quality, coarse in flavour, and is not produced in quantities sufficient to compete with the foreign article. At Kien-ning Fu, in the south of the province [Fuh-Kien], large plantations of poppy are also said to exist. Its maturity is indicated by the falling of the leaves, and swelling of the capsule; the milky sap which flows from an incision made into these, when it has become black by a day's exposure to the sun, is scraped off and collected. After having been boiled to a consistence, it is made into cakes of a horse-hoof shape about three inches thick; but it is not coated with the leaves of the corolla like foreign opium.

In Cheh-Kiang the cultivation of the poppy is chiefly confined to the prefecture of Tai-chau, to the southward of that of Ning-po. It grows most in Hwang-yen and Ning-hai, which are coast districts; is sown from the middle of the eighth moon to the end of the ninth. The plants are manured with urine until they are well grown, and, if then transplanted, decay. They flower towards the end of the second moon, the blossoms being white, pink, purple, and variegated; more than two are seldom left; the rest are lopped off. In the fourth moon, when

the plant has attained the height of from three to five feet, the petals fall, and two or three incisions are made with a bamboo spatula into the now ripe capsules, which are about three inches long, and one and a half thick; part of the epidermis is also scraped off to allow the juice to exude. The person employed then returns to gather the exuded juice on the spatula. This he transfers to his hand, which when full he empties into a vessel attached to his waist. The juice is collected early in the morning, at which time it is a whitish tint, but turns black in the sun. This process of extracting it is repeated two or three mornings running.

Partially inspissated juice fetches at Tai-chau, 500 cash per tael. The best quality is made from the juice obtained from the first incisions. The most common adulteration is from an admixture of flower petals and scrapings of the capsules pounded in a mortar, and formed into lumps of an irregular shape. This is used by the poor people of T'ai-chau. Each capsule is supposed to yield three or four candarins of opium; one Chinese acre, from ten to twenty catties, at an average price of from thirty to forty dollars. The T'ai-chau is sold a little in Ning-po, but is almost exclusively consumed by the T'ai-chau people, either as drug, or in adulterating foreign opium. They believe that if buried, in jars, for three or four years, it is superior to Patna in quality; but as it loses about half its weight by this process, it is seldom brought into operation. It is said to leave an acrid taste in the mouth, to inflame the palate, and to enervate the system more speedily than the foreign opium.

Its growth, without being directly encouraged, is connived at. It only remains to add that no accurate data are obtainable with reference to the extent of ground under cultivation; the quantity produced; or the amount of money levied by mandarins in the shape of fees; all queries on these heads being replied to in the "thousand myriad" numbers in which the Chinese are wont to reckon.

ANALYSIS OF EVIDENCE.

(Names of Witnesses arranged in Alphabetical Order.)

THE REVEREND JOSEPH SAMUEL ADAMS.

Belongs to the American Baptist Mission and has lived in China and Upper Burma, 287-292; opportunities for observation in China, 338-340.

Prohibition of Burmese authorities against use of opium in Upper Burma by Burmese, 293-294, 306-308, 356-358, 368; supported by the general opinion of the country, 309-311; prohibition of Burmese authorities against use of alcohol in Upper Burma, 369-370.

Attitude of Burmese Government as to consumption of opium by other inhabitants of Upper Burma, 312-316, 375-376.

Regulations of the Government of India in Burma, 317-320; public opinion in Burma as to total prohibition, 322-330; his opinion as to it, 336-337, 377-379.

Effect of opium smoking, 295, 301, 359, 360, 364-367; immoderate use the rule, 296-297; tendency to resume the habit after abandoning it, 299.

Opium valuable in certain ailments but no protection against fever, 298.

Consumption of alcohol by Burmans, 331-334.

Effect of the opium habit on native churches, 335.

Proportion of opium smokers in China, 300, 302, 361-363; his opinion as to the opium habit in China, 341; its effect on the spread of Christianity, 342-343; comparison between opium and alcohol, 347.

Power of China to increase the import duty on opium, 344-347.

Feeling of Chinese officials as to the opium habit and the cultivation of opium, 348-349.

Feeling of Chinese officials towards England, 350-351.

Interest in the United Kingdom in the anti-opium movement, 351-355.

MR. JOSEPH G. ALEXANDER, LL.B.

Is a barrister and secretary to the Society for the Suppression of the Opium Trade, 464-465; places before the Commission papers showing proposals made by the Society for the Suppression of the Opium Trade for dealing with the opium question, 466-497.

SIR GEORGE BIRDWOOD, K.C.I.E., C.S.I.

His experience in Western India, 1155; never met with an instance of injury from the use of opium except from poisoning, *ib.* 1182.

The healthiest populations in Western India consume opium, 1156; opium smoking quite innocuous, *ib.*, 1168-1170; question of the decomposition of morphia in the opium pipe, 1157-1161, 1178.

Opium den in Bombay frequented by the dregs of the population, but they were not brought to their state of degradation by opium, 1162-1165.

Effect of opium on the sexual passions, 1165-1166.

A political error to deprive Native States of their revenue from opium, 1165.

Consumption of opium by Native soldiers, 1155, 1171-1173.

Opium eating a stronger form of taking the drug than opium smoking, 1176; his observation has not shown opium eating to be harmful, 1174-1175, 1177-1181; the alcohol habit in Great Britain worse than the opium habit in India, 1174.

Favours opium trade being thrown open to private enterprise, 1165, 1180; deprecates policy of keeping down the consumption of opium in India, 1179.

MR. BENJAMIN BROOKHALL.

Is general secretary of the China Inland Mission, 498; scene of the work of the mission, 499.

Expresses his conviction as derived from information received from missionaries upon evil effects of opium smoking and connected matters, 501, 502; quotes reports from Yunnan, 503; from Kwei-chau and Sichuen, 504-507; from Kan-suh, 508-515; from Shen-si, 516-518; from Shan-si, 519-522; from Gan-hwuy, 523-524; from Honan, 525; from Cheh-kiang, 526; from Chih-li, 527-530.

Quotes extracts of more general application from communications by missionaries in China to show the increase in the consumption and cultivation of opium and the evil results of opium habit, 531-536.

Would prohibit export from India to China, 546-548; his opinion that such prohibition is the only chance of giving a real check to the use and growth of opium in China, 537; question whether Chinese Government would be able or willing to stop the growth and use of opium, 543-544, 547; attitude of the Government of India as to the export of opium to China, 538-542; Sir James Fergusson's declaration, 545.

THE REVEREND FREDERICK BROWN.

Is a missionary of the Methodist Episcopal Church Mission and has served in China, 673-675.

Evil effects of opium smoking, 676-677.

Effect of opium consumption on missionary work, 677-678; reads petitions from Native Churches in favour of the suppression of opium, 678, 683.

Consumption of Indian opium in Shan-tung and Chi-li, 679-680.

Effect of conversion to Christianity on the status of natives of China, 686-690.

MR. GEORGE GRAHAM BROWN.

Has been a missionary in China for more than six years, 550-551.

His opinion as to the evil effects of opium consumption on the Chinese in Lanchau, 552, 564-569, 599-607; consumption of Indian opium in Lanchau, 553-555, 570; no Persian opium consumed there, 555; proportion of opium consumers to adult male population, 594-597; growth of the habit and increase of the cultivation of opium in Lanchau, 557-560; demeanour of the people in Lanchau towards Europeans, 575-577; action of local authorities in Lanchau to enforce edicts prohibiting the consumption of opium, 571-574, 592-593.

Suicides from opium, 560-562.

His opinion as to the probable result of prohibiting export of opium from India, 578-581; favours this course, 608.

Relative strength of Indian and China-grown opium, 582-591.

DR. GEORGE DODS.

Was engaged for 18 years prior to 1877 in private practice in Canton and Hongkong and temporarily in Government service in Hongkong, 1722-1725.

Extent of the opium habit, 1728-1731; did not observe the number of opium smokers to be on the increase, 1748-1750; opium generally smoked in moderation, 1732; effects of opium smoking not generally evident, 1726-1727; no harm in moderate smoking, 1733-1734; the habit does not tend to degenerate into excess, 1735; not difficult to throw off the habit, 1736-1739; opium said to be a necessity in the marshy districts, 1740.

Agrees in the main with Dr. Lockhart, 1741-1744, 1747, but not entirely as to the number of opium smokers, nor as to the extent of spirit drinking, but those vary in different parts of China, 1745.

Not familiar with the proportion of smokers using Indian opium, 1750; never heard the Chinese blame the English for introducing opium, *ib.*

MR. T. W. DUFF.

His letter read, 1637; lived in China for 30 years, *ib.*; considers opium not to be deleterious to natives of China but to be a necessity, *ib.*; this due to conditions under which the Chinese live in Southern and Mid-China, *ib.*; occasional abuse in large towns, *ib.*; foreigners do not require opium in China, as they live under different conditions, *ib.*; nor do the Chinese living in mountainous districts and the north, where they consume alcohol, require it, *ib.*; all nations need a stimulant, *ib.*; Chinese speaking with foreigners will speak against the opium habit from politeness, *ib.*; never heard any Chinese blame the

British Government for introducing the drug, *ib.*; cultivation of the poppy in 1865 smaller than it would otherwise have been owing to the unsettled state of the country, *ib.*; proclamations forbidding its cultivation at that time issued owing to difficulty of collecting the revenue, *ib.*; opium revenue has greatly assisted the Chinese Government in centralising authority at Peking, *ib.*

THE REVEREND A. ELWIN.

Has been a missionary attached to the Church Missionary Society in China for 23 years, 610.

Effect of opium smoking in Hangchau and neighbourhood, 611-615, 623-624, 633; tendency to increase the dose, 630-632; proportion of opium consumers in Hangchau, 616-617; spread of the habit, 618; increase of cultivation, 621, 635-636; attitude of the local authorities in Hangchau as to the edicts, 619-620; Indian opium consumed in Hangchau, 621.

Chinese feeling as to the connexion of the British Government with the opium trade, 622-623.

Effect of opium smoking on coolies and chair-bearers, 611, 625-630.

Opinion as to whether the introduction of Indian opium has led to the increased growth of the poppy in China, 636-638.

SIR JOSEPH FAYRER, K.C.S.I., M.D., F.R.S.

His letter read, 1637; served 30 years in India, *ib.*; agrees that ideally people would be better without stimulants and narcotics, *ib.*, opium abused to a limited extent in large cities in India and China, *ib.*; habitually used in moderation over large areas in India, *ib.*; believed to be a prophylactic against malaria and to facilitate the performance of all the functions of life, *ib.*; does not believe that the tendency of opium eating is ever to increase, *ib.*; cites an instance in his personal experience in support of his view, *ib.*; use of hemp drugs infinitely more harmful than that of opium, *ib.*

THE REVEREND CHRISTOPHER FENN, M.A.

Is secretary to Church Missionary Society in charge of the China correspondence, 430; not personally acquainted with China, 433.

Number of missionaries working in China under the Church Missionary Society, 431.

Opinions of missionaries under the Church Missionary Society as to the effects of the opium habit in China, 432.

His opinion as to whether action of the British Government with the opium trade prejudices missionary work in China, 434-435.

Popular feeling in China as to the attitude of England towards the opium traffic, 436; inability of missionaries to correct erroneous impressions on the subject, 437-442; Sir James Fergusson's declaration, 438; his opinion that the prohibition of export of opium from India to China would be the best means of convincing the Chinese Government that England would not compel them to import opium, 438, 442-449; action of the Indian Government in relation to the opium trade, 439-441.

DR. WILLIAM GAULD.

Is a medical missionary who has worked in Swatow and England, 825-832.

Prevalence of the opium habit in Swatow, 833-835; among the literary class, 849-852; opium chiefly used in a smoking mixture, sometimes by eating it, 836; in his opinion there can be no moderate use of opium except as a medicine, 853-854.

Considers the habits of morphia eating and opium smoking and eating to be interchangeable, 837-845; does not consider opium smoking to be a prophylactic against fever, 846-848.

Considers that the effects of opium cannot differ in essence in respect of different races, 855; the hold which opium takes on those who use it greater than that of alcohol, 856, 857.

Opium smokers more liable to diseases than others, 858.

Missionary labourers interfered with by the opium habit and Chinese feeling towards Englishmen, 859-862.

SIR LEPEL GRIFFIN, K.C.S.I.

His opportunities for observing the opium question in India, especially as opium agent for the Native States in Central India, 1527-1529.

The system of taxing opium grown in Native States, 1530-1532; the chief opium-growing States, 1545-1547; no attempt made by Government to increase the cultivation, 1533-1535; cultivation not interfered with, 1536-1538; methods of raising opium revenue in the Native States, 1539-1540; proportion of their revenue from opium export to their total exports, 1571-1577; decline in the export of opium, 1578-1580; probable effect of prohibiting export from Native States, 1541-1544, 1548-1549; such an act would be tyrannous and be resented, 1551-1609; no treaty rights under which the Government of India can interfere with the cultivation of opium in Native States, 1552; concessions to Native States, 1535, 1538, 1562-1567; character of his land on which opium is cultivated, 1549-1550, 1581; his opinion as to the probability of the revival of the export opium trade with China, 1561.

Extent of smuggling, 1553; precautions against it, 1554, 1590-1593; if export were prohibited, it would be impossible to control smuggling, 1568-1570, 1610.

People of Central India not consumers of opium to a large extent, 1555-1556; opium has no effect on crime, 1557; his opinion that it has no appreciable effect on the public health, 1558, 1601-1603; produces no widespread evils in India, 1608; alcohol worse than opium, 1560.

Use of opium water, 1582-1589; opium generally taken in moderation, 1594-1595; the opium habit among Sikhs, 1559; Sikhs and Rajputs, the finest races in India, have been taking it for generations, 1595-1597; question whether Rajputs and Sikhs tolerate opium better than other races, 1597-1599; Europeans and the opium habit, 1598, 1599a-1600; opium sots a degraded class in large cities, 1604-1607.

The prohibition of the cultivation and use of opium would irritate the people, especially the Sikhs, and would make them disloyal, 1611-1612.

Recommends no change in present arrangements, 1613.

His opinion as to the character of much of the missionary evidence on the opium traffic, 1615.

MR. THOMAS HUTTON.

Has been a missionary in the north of China, 1961, 1965; agrees with other missionaries as to the evil effects, morally and physically, of opium smoking, 1968; opium is called foreign smoke, 1970; though it is produced in Chinese territory, 1972; the Chinese attribute its introduction to the British, 1989-1993; attitude of the Chinese towards missionaries, 1994-1998; travelled for two years as a native of China, 1975-1977; opium smoking common in the north, 1977-1978; and among women in some of the towns, 1979; the habit on the increase, 1978; his experience that opium smokers are unreliable as servants, 1980-2000; the population in Northern China stronger than in the south, 1982-1984; they consume more wheaten bread, 1983; found the population on his travels degenerate and unhealthy, 2001-2004, 2007; the physique of the Chinese naturally good, 2008; opium smokers cannot take wine, and take very little food, 2010, 2011; opium smoking worse than spirit drinking, 1981.

THE REVEREND ALEXANDER LANGMAN.

Has been a missionary in China for eight years, 1509-1510, 1526-1526a; agrees with views expressed by other missionaries as to evil effects of opium smoking, 1511.

Produces a letter from a native evangelist describing these effects, 1512-1513.

Animosity of the Chinese to foreigners, and particularly to Englishmen, due to the connexion of the British Government with opium, 1515, 1523.

His opinion that if the export of opium from India to China were prohibited the work of the missionaries would be made easier, 1524.

Belief of the Chinese as to opium smoking resulting in the extinction of families, 1525.

MR. H. N. LAY, C.B.

Was many years resident in China in the Consular service and in the service of the Chinese Government, 1183-1187.

Introduction of opium into China and its entry in the tariffs, 1189-1193; question of prohibition in 1729, 1270-1272; and in 1724, 1273; Mr. Fitz Hughes' letter, 1274; decree of prohibition of 1799, 1194-1201; opium continued to be imported and duty to be

collected after this decree, 1202-1204; the smuggling trade, 1205-1215, 1224-1225; cultivation of the poppy widespread in China in 1830, 1216-1220; the Tai-ping rebellion, 1221-1222; cultivation in 1858 and 1864, 1255; opium legalised by the Chinese Government in 1873, 1226; it then determined to prohibit it again, 1227; Lord Palmerston's despatch, *ib.*; action of the Chinese Government in 1839, 1223, 1228-1232; opium not mentioned in the Treaty of Nankin, 1233; his view that the Chinese Government was then indifferent upon the subject of the import of opium, 1235-1239, 1241; Chinese officials never complained to him of the action of the British Government in respect of opium, 1239-1240; the seizure of the "Arrow," 1241; this, and not opium, the cause of the second war, 1243-1244; opium not mentioned in the course of the negotiations in 1858 regarding the Treaty of Tientsin, 1245-1246; but entered in the tariff subsequently prepared, 1247-1248; action of the Chinese Government and Sir Rutherford Alcock in 1869, 1249-1253; his opinion as to the allegation that the Chinese Government threatened to withdraw all restrictions in China in order to destroy the import from India, 1254; his view that in all the negotiations it was not the object of the British Government to force opium in China, 1282; the Chinese Government had always regarded opium from a fiscal point of view, 1262; Mr. Burlingame's mission to England in 1868, 1258-1260; his opinion that if the export of opium from India were prohibited, the Chinese Government would not prohibit the consumption of opium, 1263-1269; his opinion that the Chinese Government is not deterred from opening the opium question by the fear that the Indian Government might claim to be recouped for loss of revenue, 1279; complaints of the manner in which the action of officials as to opium in China has been misrepresented, 1256-1257, 1275-1278.

His opinion that statements as to evil effects of opium smoking among the Chinese are exaggerated, 1280; opium generally used in moderation, 1281; the physique of the Chinese very good, *ib.*; opium taken as a prophylactic in the malarial districts in the mid-provinces and southern provinces, *ib.*; immoderate use injurious, 1280.

MR. HENRY LAZARUS.

Was engaged in China in commerce unconnected with the opium trade from 1878 to 1881, 1618-1621; employed on an average 200 natives of China, 1623-1624; many were opium smokers, 1627; those who smoked opium were never rendered unfit for work by it, and were as good as the rest, 1626, 1628; domestic servants not incapacitated by smoking, 1633.

His own experience of opium smoking is that it is too tedious for Europeans to take to it, 1628-1630; excessive smoking does not destroy intellectual power, 1626, 1631; not necessary to increase the dose, 1631; opium traffic not the cause of the dislike of the Chinese to Europeans, 1632.

THE REVEREND JAMES LEGGE.

Is Professor of the Chinese language and literature at Oxford, 165; has resided in Hong Kong and Malacca and visited China, 166-168.

His experiences of opium smoking in Malacca and China, 169, 170; opinion of the respectable classes as to the habit, 170, 171; prevalence of the habit, 172, 173, 200, 201, 212.

Characteristics of the people of China, 174-176; opium smoking prejudicial to work, 177; the majority of persons who smoke opium gradually come more and more under its influence and smoke to excess, 178, 209, 210; the habit of smoking opium results only in evil, 179, 207.

Feeling of the people in China as to the attitude of England as regards the opium traffic, 180-184.

Power of the Chinese Government to exclude Indian opium, 185-187.

Introduction of the cultivation of the poppy and the use of opium into China, 188-192; increase of cultivation in China, 193-197.

Consumption of alcohol in China, 198, 199, 204.

Opium prohibited in Japan, 202; consumption of alcohol in Japan, 203.

Probability of the Chinese Government stopping the growth of opium in China, 205; England's attitude in first Opium War, *ib.*

Opium smoking not to his knowledge generalised in any community in China, 211; Chinese population of Hong Kong in 1894 approached this condition, 211.

MR. STEWART LOCKHART.

Is Protector of the Chinese in Hong Kong, 1375; his duties, 1421-1424.

Chinese popular opinion decidedly against the opium habit, 1380, 1381.

Moderate consumption possible, 1388; proportion of moderate smokers, 1403-1410; moderate use need not end in excess, 1434-1437; relative effects of moderate and excessive smoking, 1382; distinction between the drunkard and the opium sot, 1388, 1411; his experience against the idea that the Chinese hate the British on account of the opium question, 1384.

Does not think that the existence of the opium trade affects British commerce prejudicially, 1385.

The population of Hong Kong, 1395-1398; opium divans in Hong Kong, 1386-1387, 1428-1433; question whether opium consumption affects the death-rate in Hong Kong, 1389, 1414-1416, 1419, 1420; the opium farms in Hong Kong and the Straits, 1390-1392; not in favour of an edict of total prohibition in Hong Kong, 1393, 1394; opium smoking prevalent among the Chinese population, 1399-1401; not so prevalent as the use of alcohol in Great Britain, 1402; opium smoking stationary in Hong Kong, 1412, 1413; consumption per head of the Chinese population in Hong Kong, 1416-1418; never heard of a European taking to opium, 1425; Chinese opium not consumed in Hong Kong, 1426, 1427; consumption of spirits by Chinese in Hong Kong, 1439-1443.

MR. WILLIAM LOCKHART, F.R.C.S.

Was a medical missionary under the London Missionary Society in China for 25 years up to 1864, 1638, 1703.

Opium generally smoked in China, 1691-1693; many Chinese take opium in moderation, 1641; they generally increase the dose with evil results, *ib.*, 1642, 1653, 1661; proportion of moderate and excessive consumers among the population, 1643-1652, 1654, 1708-1710; opinion as to the effect of opium, 1661; does not regard even moderate use as beneficial, 1653; consumers in excess can be cured of the habit, 1674-1676; opium not generally taken to relieve pain, but for dissipation, 1684; power of control of opium smokers, 1694-1697; reason why the opium pipe is smoked lying down, 1698; extent of opium cultivation in China, 1654-1660.

Alcohol a greater social evil than opium, but opium more personally harmful to individuals, 1667; alcohol a greater curse in England than opium in China, 1668.

Suicide by means of opium, 1669-1673.

Opium not forced on China by the British Government, 1677, 1699-1701; never heard this alleged in China, 1702; advocates the Government of India abandoning the monopoly and reducing the area of poppy cultivation, 1677, 1711-1714; China opium cheaper and more impure than Bengal opium, 1685-1687.

Consumption of opium by Europeans, 1688-1690.

Opium smokers not permitted to belong to his church, 1704-1707, 1715; the same rule would apply to spirit drinkers, 1716; spirit drinking prevails in Japan, 1717-1718; in his opinion it is unlikely if opium smoking were stopped in China that spirit drinking would prevail, 1719, 1720; the Chinese altogether superior to the Japanese, 1721.

SIR HUGH LOW, K.C.M.G.

Letter from, 1637; formerly administrator of Perak and other States in the Malay Peninsula, *ib.*; experience in Perak and Labuan, *ib.*; farm of right to collect duty in Perak, *ib.*; drug consumed generally in moderation by labourers, chiefly Chinese, in mines as a prophylactic against miasma, *ib.*; also by shopkeepers, artisans, servants, *ib.*; more tendency to abuse among this class, *ib.*, also by wealthy Malays and Chinese, *ib.*; two-thirds of the Chinese population smokers, but very few Malays, *ib.*; used by criminal classes of both races, *ib.*; general health affected in occasional but few cases, *ib.*; opium habit had no influence on crime, *ib.*; moderate use of opium said to clear the intellect, *ib.*; use of opium prohibited in State prisons, detention in which invariably resulted in improved physique, *ib.*; no such abuse in Perak or Labuan as to justify further restrictions, *ib.*

MR. D. MATHESON.

The contraband opium trade, 790-792; liable to attacks from pirates, 803-804.

His account of the events of 1839-1841, 793-796; comments on the attitude of British Government from 1841-1858, 802.

Incidents which led him to condemn the opium traffic, 797-799; at considerable injury to his pecuniary position, 824.

Recommends the prohibition of export of opium from India to China, 800, 801, 805-811.

His opinion that comparison cannot be made between the export of spirits from England and the export of opium from India, 810-823.

DR. MAXWELL.

Is a doctor of medicine and secretary to the Medical Missionary Association, 214, 215; was a medical missionary in Formosa, 216.

Character of his experience, 217, 218; extent of the opium habit, 219, 238, 239, 258-260; children not allowed to take opium in Formosa but learn to do so in when pretty young, 274.

Comparative effects of opium smoking, tobacco smoking, and dram drinking, 220, 273.

Habitual consumption of opium the rule, 221; consumers become slaves to the drug, 222-224.

Physical evils of the opium habit, 225; moral evils; 226; social evils, 227.

Opium not in his opinion a prophylactic against malaria, 228.

Consumption of Indian opium in China and increase of consumption of native opium, 229-235; Persian opium, 281-286.

Opium smoking universally regarded in China as a vice, 236, 237.

Indian opium traffic tends to hinder Christian missionaries in China, 238, 239, 264-272.

Opinions of the medical profession in the United Kingdom as to the habitual use of opium, 240; medical opinion in India, 241, 242, 245; medical opinion in China, 243, 244; no statistics exist as to public health in Formosa, 261.

Power of the Chinese Government to exclude opium, 246-256.

Comparison between opium smoking and opium eating, 262.

Action of Government of India as to export of opium, 264-269, 275-280.

Suicides from opium in China and India, 274.

MR. DAVID McLAREN.

Formerly President of the Edinburgh Chamber of Commerce, 1751.

Presents tables of statistics of trade between India, China, Japan, and the United Kingdom, 1862.

The Committee of 1848, 1753; increase of exports from China after the reduction of the tea duty, 1754; not accompanied by corresponding increase of imports from England, *ib.*; increased import of opium from India, *ib.*; possibility that anticipated increase of trade between England and China at that time went indirectly in an increase of trade with British India, 1822-1835.

History of trade with China, 1753-1758; contrasts trade of England with China with England's trade with Japan, 1758-1760, 1765-1769, 1840-1848; contrast between Chinese and Japanese in the matter of dress, &c., 1795-1801.

His opinion that import of opium from India into China prevents China from buying English manufactures, 1758-1764, 1769-1776, 1849, 1850, 1855-1856; the substitution of India for China tea has impaired the ability of China to purchase English manufactures, 1761-1764, 1862; export of yarns from India to China, 1791a-1795, 1851-1854; England's trade with China stationary during the past 15 years, though import of opium from India has largely decreased, 1836-1837; this owing to Chinese smoking native opium, 1838.

Produce of poppy per acre under cultivation in India declining, 1771, 1772.

Policy of the Government of India in 1860 to take as large a crop as possible, 1772-1774; refers to this policy as not having been changed, 1774-1776.

Quotes opinions of officials as to the pernicious character of the drug, 1778-1785.

Advocates prohibition of poppy cultivation in India and the export of opium to China, 1802-1821; his opinion that the smoking of native opium would then be stopped, 1839.

MR. ALEXANDRE MICHIE.

Is a merchant with 40 years' experience of China, 2012-2018.

The use of opium deprecated by public opinion among the Chinese, but not more than the use of alcohol in European countries, 2019-2021; extent to which the opium habit prevails in China, 2022-2025; few opium smokers among his employees, 2026-2027; moderate smoking more common than inveterate smoking, 2028; effect of moderate smoking, 2029-2031; opium smokers not more dishonest than others, 2032; opium smoking among the better classes, 2040-2044, 2047; those classes not degraded or of degenerate health, 2045-2046, 2048-2049; no opium smoking in Japan, 2033; the Japanese alleged to be inferior to the Chinese, 2034; opium trade has not affected the attitude of the Chinese towards Englishmen, 2036-2038; considers excess in alcohol worse than excess in opium, 2039.

SURGEON-GENERAL SIR WILLIAM MOORE, K.C.I.E., Q.H.P.

Served 33½ years in India, 1000, 1001.

Investigated the opium question in Rajputana and Bombay, 1002-1004, 1024; no generalized consumption in Bombay, 1025-1029, 1032-1039.

His conclusion that opium smoking is practically harmless, and opium water not only harmless but beneficial in moderation and a prophylactic against fever, 1005, 1057, 1058; excess in opium not so injurious as excess in alcohol, 1006; opium more beneficial than alcohol, 1022, 1023; use of opium on the whole beneficial, 1067-1073; a large proportion of visitors to opium dens have ailments which they go there to relieve, 1074-1079; the habit not regarded as disgraceful, 1036-1039, 1080-1085; the prohibition of the sale of opium in India, except for medical purposes, would be an interference with the habits and customs of large sections of the population, 1007, 1030, 1031.

Effect of the habitual use of opium on different races, 1008; prevalence of the habit among the Rajputs, 1009-1014, 1107; the Rajputs a healthy class, 1015; no reliable statistics of births and deaths in Rajputana, 1016; habitual opium consumers generally take their opium at night, 1019; no general tendency to increase the dose, 1017, 1018; excessive use deleterious but the exception, 1021; habitual use in moderation does not shorten life, 1020; amount consumed by opium smokers, 1088, 1089; the use of opium among men tending camels in the desert, 1007, 1090, 1091; has had little experience with the Sikhs, 1040; tobacco forbidden by the first Sikh teacher and the use of alcohol deprecated, 1097, 1098; large sections of the population in India do not use opium, 1041; cannot speak as to the relation of the opium habit to race, 1042-1046; early use of opium by Rajputs during their constant fighting, 1099, 1100.

Insurance offices do not impose a higher rate on opium eaters, 1047-1057.

Erroneous impression that the cultivation of opium leads to famines by reducing the land for the growth of cereals, 1057; the migration during the famine in Rajputana from Marwar to Malwa, 1101-1106.

The opium habit among Europeans, 1051-1054; does not spread among them owing to habit rather than to constitutional difference, and also because opium smoking is troublesome, 1059-1066.

DR. F. J. MOUAT.

His opportunities of studying the question in India, 1109-1112.

His experience of the use of opium by Marwaris and Chinese in Calcutta, 1112-1119; the Chinese opium smokers and the Marwaris opium eaters, 1149, 1150; the habit has come down in India from former generations, 1120-1122; regards consumption of opium in moderation, as in the case of these two colonies, as quite as harmless as the moderate use of alcohol among Europeans, 1123-1131, 1134; opium is also valuable as a prophylactic and febrifuge in malarial tracts, 1153; the use of opium in excess bad, but he has no experience of use in excess, 1132, 1133; his experience with other classes attending the hospitals, 1135-1137.

His experience of opium in relation to crime and insanity in Bengal, 1139-1144.

More habitual consumers of ganja than of either spirits or opium, 1144; ganja not mixed with opium

in India, 1151, 1152; quotes, with approval from a discussion by Calcutta Medical Society, 1144-1147.

Consumers of opium not ashamed of the fact, 1148; suppression of the use of opium would lead to increased consumption of more harmful stimulants and narcotics and would be actively resisted by the more manly and warlike races in India, 1153; use of opium for the purpose of exciting sexual desire, 1154.

DEPUTY SURGEON-GENERAL W. P. PARTRIDGE.

Is a Deputy Surgeon-General in the Bombay Army and served in India 30 years, 1884; the opium habit a vice, 1888, 1896, 1918; worse than alcohol, 1896; the fumes from smoking affect persons other than the actual consumers, 1888-1888; many persons who resort to opium dens are not led to do so by sickness though some are, 1888-1895.

Confidential circular issued by the Government of the North-Western Provinces and Oudh as to opium dens, 1900-1914; opium dens condemned by opium smokers, 1915-1917; opium a predisposing cause of death, 1919, 1920, 1952-1955; opium eaters in jails, 1920, 1949-1951; the danger of stopping opium in such cases, *ib.*; violent crime committed among Rajputs under the influence of opium, 1920-1956; opium not a prophylactic against fever, 1921; opium given to children and arrangements for the sale of pills for children, 1922-1946.

Possibility of prohibiting the sale of opium in India except for medical purposes, 1957-1960.

SIR JOSEPH PEASE, BART., M.P.

Is President of the Society for the Suppression of the Opium Trade, 2; has not visited India or China, but has received constant communications on the subject from those parts of the East in which opium is used, 108, 109.

His views as to the connexion of the Indian Government with the manufacture and sale of opium, and as to the immorality of the opium trade with China, 4-13, 105; the export trade to China the most important branch of the subject, 16, 112; regards the position of the Government in Bengal as worst, 147, 148.

Statistics of the opium trade with China, 14, 15, 18; statistics of the cultivation of the poppy, 40-45.

History of the Chinese opium trade, 20.

Policy of the British Government as to compelling the Chinese Government to import opium, 21-23.

Cites opinions given in support of the views of the Society for the Suppression of the Opium Trade, 24-39.

History of the opium question in the House of Commons, 46-63.

Public interest in the opium question in the United Kingdom, 54, 55; action of foreign countries, 56-59, 139-143.

Treaties prohibiting the importation of opium into China, 60-62.

Cites opinions as to the evil effects of the opium habit in China, 63-71; and in India, 72-77; quotes extract from speech of the late Lord Shaftesbury as to the medical aspect of the case, 79-84; cites opinions of Indian officials in the Blue Book of 1892, 85-93.

His views on the financial aspect of the case, 94, 95; the increased expenditure on the army in India 95, 96; the need for the development of railways in India, 95-98; quotes from official papers as to the uncertainty of the opium crop, 100.

Growth of opium in China stimulated by import from India, 12, 13, 133; import of Persian opium into China, 134, 136; objection of Sir James Fergusson to allowing cultivation in the Bombay Presidency, 36, 37, 137-139; anxiety of the Indian Government in 1869, and later, to increase the area under poppy, 3, 110; subsequent policy of reducing the area, 111.

Disposition of Government officers in India to restrict local sale, 16, 17; the Indian system as to internal consumption is now strongly repressive, and could only be improved by total prohibition of the cultivation of poppy except for medicinal purposes, and the sale by license of medical opium, 113, 114; question whether the English system of sale by druggists prevents purchases for non-medical purposes, 115-118.

Use of opium by natives of India, 119-121.

Views on the transit duty on opium paid by Native States, 101-103, 106, 107; concessions to Native States, 102, 103, 148-151; growth of poppy in Malwa, 157; fall in price of Malwa opium chests, 158; transit duty reduced to stimulate cultivation, 159, 160.

Origin of manufacture by Indian Government, 162-165.

THE REVEREND GEORGE PIERCY.

Founded the Wesleyan Mission in China, 1; his opportunities for observation in China, 2, 3.

Cites instances and states his opinion as to the evil effects of opium smoking, 453-460.

Agrees generally with the evidence previously given by missionaries, 461, 462.

BRIGADE-SURGEON R. PRINGLE, M.D.

Was in the medical service of the Government of India for 30 years, 691-694; considers opium invaluable medicinally, but useless as a dietetic, and to febrifuge only as being a sedative, 695; if taken in small doses in fever districts its effects would be harmful, 706; if ample supplies of quinine made available in malarial districts in India, there would be no need of opium as a febrifuge or a prophylactic, 747-750.

Evil effects of opium habit in India not visible to any extent, except among the dregs of the population in towns, 695, 702, 712; indulgence in opium inconsistent with self-respect in India, 695, 711, 722-724, 742-746.

Opium not served out by him to troops when on service in a very malarious district, 698-701; the effects of opium on native troops, 734-738.

Tendency of opium consumers to increase the dose, 703, 704; the immorality of the opium habit, 705, 707.

His view as to the attitude of the Government of India in relation to the opium trade, 708.

His view as to withholding opium from habitual consumers, 708-711, 714-722, 733, 741, 742.

Recommends that opium should be cultivated only for medicinal purposes, 713, 714.

Policy of the Government of India as to opium and liquor, 725-729.

Advocates stopping the sale of spirits as well as of opium, 729.

Facilities for purchase of opium in India and England, 729.

No difference in the effect of opium on different races, 730.

Advances to cultivators in India for poppy and other cultivation, 738, 739.

DR. F. IRVINE ROWELL, M.D., C.M.G.

Was employed 25 years as a medical officer of the Government in the Straits Settlements, 1444, 1445; now retired, 1446.

Population of Singapore, 1447-1449; Chinese in Singapore, 1450, 1451; opium smoking not generally prevalent among the Chinese there, 1452-1455; Chinese opium smokers in the pauper hospital, 1456; the opium habit among them generally the result of disease, 1457-1459; the majority moderate smokers, 1460, 1461; Chinese opium smokers in the criminal prison, 1464, 1465; their crime, as a rule, unconnected with the open habit, 1466-1468; opium, as a rule, immediately withdrawn from prisoners, but allowed for a time in exceptional cases, 1469-1470; in some cases as a necessity, 1492-1495; no injury from the stoppage of opium in cases of habitual moderate smokers, 1472-1475; Chinese coolies who smoked opium ordinarily not so healthy as others, as they had taken to opium to relieve disease, 1476-1478, 1489-1491; continued to smoke after regaining their health and without prejudice to efficiency, so long as they did not exceed, 1479, 1480; moderate opium smokers no worse in health than moderate tobacco smokers, 1481-1488; the moderate use of opium of assistance mentally, 1482-1485; the good of opium exceeds the evil, 1486, 1487.

Revenue in Straits Settlements from opium, 1496, 1504-1507; Indian opium in Singapore, 1508.

Anti-Opium Society in Singapore, 1497-1503.

THE REVEREND T. G. SELBY.

Was for 12 years a missionary of the Wesleyan Mission in the interior of China, 1863, 1864, 1868, 1869.

His pamphlet "The Poppy Harvest: a study of Anglo-Indian Ethics," embodies his views, 1870-1873; the cartoons reflect the average opinion of the Chinese on the subject, 1875.

Agrees with the evidence given by other missionaries, 1866, 1876, 1877; missionaries brought more into contact with the Chinese people than other persons are, 1867.

Estimate of mortality caused by opium imported from India, 1878-1881; the opium habit has an unfavourable effect upon the general health, 1-83.

SIR JOHN STRACHEY, G.C.S.I.

Had 38 years' experience in India, 864-865; his opportunities for observation, 866-868.

The financial aspect of the opium question, 869-871; estimates profits to all classes out of the opium crop at a great deal more than Rs. 19,000,000 a year, 888-890, 936-937; 100,000,000 would not be adequate compensation to India, 891; revenue from opium about Rs. 5,750,000, 892-894, 933-935; general revenue of India is increasing, 910-913; and also expenditure, 914-916; increase of military expenditure, 917-922; opium revenue uncertain, 923-925; impossible to find taxation to take its place, 909; can suggest no means of making this loss of revenue good, 894; reduction of expenditure impossible, *ib.*; opium generally consumed in India in moderation, and is beneficial, 872, 901, 903; consumption generally infinitesimally small, but certain classes have consumed it from time immemorial, 872, 898; consumption has diminished, while population has increased, 872; danger that smuggling may result from high price, *ib.*; the habitual consumers, notably the Sikhs and Rajputs, are the finest races in India, *ib.*, 898, 899; consumption among Sikh and Rajput soldiers, 927-932, 935-939; danger of prohibiting consumption in India, 872; China does not depend on India for her supply of opium, *ib.*; Indian opium a luxury, *ib.*; production in China out of all proportion to that in India, *ib.*, 979; most consumers in China take it in moderation, 872, 902, 904, 948; the Government of China free to prohibit importation of opium from India, 872; his opinion as to its wish to do so, 905; the sacrifice of Indian revenue would be an act of folly and injustice, 872; question whether, if opium is demoralising to China, the Government of India should continue export it there, 949-952.

Endorses the view of the opium question presented in Mr. Batten's paper, read before the Society of Arts, 875.

The arrangements with the Native States in India, in respect of opium, 876-881, 926, 963-966, 977, 978; production in Native States, 906; manufacture in Native States not in hands of European officials, 954-958; prohibition of the growth of the poppy in Native States in the Bombay Presidency, 959-962; can suggest no means of stopping production of opium in, or preventing its export from, Native States, 885, 907; objections to a customs line 885-887; no customs line at present, 990, 991; smuggling of opium grown in Native States, 967, 969, 992, 993.

The position of the Government in Bengal as regards the production of opium, 882-884; object of the Government of India to restrict consumption both in China and India, 895; the state monopoly the most repressive of all fiscal restrictions, *ib.*; substitution for opium monopoly of heavy export duty might not diminish revenue but would lead to increase of consumption both in India and China, *ib.*; great difficulty of preventing smuggling from Bengal, if monopoly abandoned in favour of export duty, *ib.*; no distinction from the point of view of morality can be drawn between a system of monopoly and an export duty, *ib.*; no greater objection on economic grounds to a monopoly of opium than to a monopoly of tobacco, *ib.*; would not recommend the substitution of a licensing system for the Bengal monopoly, 976.

Burma the only country under the Government of India as to which evidence showing the injurious effects of opium is produced, 897; this evidence only refers to consumption by Burmese, *ib.*; no evidence that the consumption of opium is a crying evil anywhere in India proper, *ib.*; great difference between the races inhabiting different parts of India, *ib.*

Prohibitive measures in India would lead to political dangers of extreme gravity, 900, 908.

Possibility of substituting other crops for opium in India, 938-942; advances to cultivators, 994-998.

Practically impossible for the Government to encourage the growth of opium to any extent, 943-947.

Opium consumed by the Sikhs grown under license in the Punjab and in Native States under the Punjab Government, 970-975.

THE REVEREND W. S. SWANSON, D.D.

Was in China up to 1881 in connexion with Presbyterian Missions, 751, 753, 754, 756; during 20 years in Fuh-kien never saw any poppy cultivation, 755; agrees with the views of other missionary witnesses as to the evil effects of the opium habit, 757; opinions of the Chinese on the subject, 758, 765-767; advocates the entire suppression of export of opium from India to China, 759; probable effects of such a policy on the Chinese Government, 760; attitude of the Chinese officials as to enforcing the regulations prohibiting the use of opium, 761; question whether the Chinese Government is free to prohibit the import of opium from India, 762-764.

Spirit drinking in China, 768-770.

Tobacco smoking in China, 771-774.

Number of Chinese converted to Christianity, 775-778.

Classes from which converts are drawn, 779-789.

THE REVEREND HUDSON TAYLOR.

Is founder and general director of the China Inland Mission and a member of the Royal College of Surgeons, 380-383; his opportunities for observation in China, 384-387.

Effects of opium smoking on the Chinese, 388, 389, 391, 412-415, 420-422; on chair-bearers and coolies, 409 411, 417-419.

Prevalence of the opium habit in China, 390; the opium habit worse than the alcoholic habit, 423.

Unpopularity of the English with the Chinese owing to the opium traffic, 393-395, 424-427.

Present attitude of public opinion in Great Britain as to compelling Chinese Government to import Indian opium, 396; value of communicating Sir James Fergusson's declaration, 397, 398, 402; suggests it might be officially communicated to the Chinese Government, 399-401.

Question of the extent to which considerations of revenue influence the Chinese, 403.

Very few opium smokers can abandon the habit, 404; age to which opium smokers live, 405-408; rate of mortality among the Chinese, 416, 417.

Question whether, if the Indian Government stopped the export of opium to China, the Chinese Government would prohibit the import of other foreign opium into China, 428, 429.

MR. POLHILL TURNER.

Has been a missionary in the north of China, 1963-1964.

The main characteristics of the Chinese the same in the north as in the south, 1967.

Opium largely consumed in the north, 1968-1970; is called foreign smoke though produced in China, 1970, 1971, 1973.

Agrees with Mr. Hutton as to evil effects, morally and physically, of opium smoking, 1987, 1988.

The Chinese condemn opium as a curse, 2009; opium interferes with the endurance of chair-bearers, 2010.

SIR THOMAS F. WADE, G.C.M.G., K.C.B.

Served 40 years in China and was British Minister at Peking, 1283, 1284; opium not introduced into China by the British, 1285, 1317-1319; was known as a medicine in China ten centuries ago, 1285; smoking of recent date, but introduced from Manilla before our trade developed, *ib.*; Tso Tsung-tang's opinion that it was introduced in 17th century, *ib.*; supply from India at first not more than enough for the consumption of 1 per cent. of the population, *ib.*; 30 or 40 years ago sufficient for 2 per cent., *ib.*, 1357-1360; cultivation in 10 provinces in 1847, 1285; opium regularly taxed like other imports in certain places, 1286.

Many Chinese suffer from excess of opium, but to a great number it is a stimulant, like beer is in England, 1285, 1286; his views expressed in 1871, 1320; since modified by him, *ib.*

Wars with China directly traceable to the determination of the Chinese to ignore relations with England, 1287, 1289, 1321-1323; quotes from the "Chinese Repository" in support of this view, 1289;

the seizure of opium only an incident of the first war, 1287; the capture of the "Arrow," 1289, 1290; opium not the cause of the second war, 1291; Lord Clarendon's reference to opium in his instructions to Lord Elgin, *ib.*

The Tientsin Treaty, *ib.*; Mr. Reid subsequently urged Lord Elgin to regularise the trade, *ib.*; opium entered in the tariff without any objection by Chinese, *ib.*; manner in which the rate of duty was fixed in the tariff, 1324-1329; the real concern of the Chinese was about the residence of a Foreign Minister at Peking, *ib.*, 1292; refusal of the Chinese to admit Sir Frederick Bruce into Peking, *ib.*; this led to the third war, 1297-1298; forcing the opium trade never an object with the British Government, 1299, 1300; the subject of opium not mentioned after 1860 till in 1868 Sir Rutherford Alcock suggested an increase of duty, 1300; objected to by the Indian Government, 1301; not referred to again till the Chefoo Convention, when the object of the reference was to ensure the Chinese Government its revenue against foreign importers, *ib.*, 1331-1353; delay in confirming the Convention, 1302, 1336, 1337, 1361-1363; the Chinese did not ask for free liberty as to the amount of *likin*, 1338, 1339; the regularisation of the trade at Hong Kong, 1302; question of the power of Chinese Government to prohibit importation, *ib.*

The attitude of the Chinese Government towards the opium habit, 1303; quotes from his conferences with Chinese Ministers on the subject, 1304-1308; individual Chinese officers at times take rigorous measures against opium, but the feeling of the Central Government not very active, 1309; does not agree in Sir Rutherford Alcock's opinion on this point, 1363-1370.

Inclusion of the prohibition of the import of opium in the treaty of 1868 between China and America due to the American Government wishing to give something in order to secure the encouragement of immi-

gration, and also probably to an anti-opium party in the States, 1311, 1312.

Sir James Fergusson's declaration, 1302, 1340-1343; if the Chefoo Convention were denounced, the provisions of the Treaty of Tientsin would come into force, 1344-1347; the prohibition of the export of opium from India to China would be futile in preventing the consumption of opium, 1313; nor would it remove our difficulties with China, *ib.*, 1371-1373; the sincerity of a proposal by British Government to prohibit export would probably be doubted by the Chinese, 1313; proposal of Chinese Minister in 1881 for higher rate of *likin*, 1348; England would do a disservice to China if it abandoned interference with the internal duty, 1349, 1350.

Mr. MARCUS WOOD.

Is connected with the China Inland Mission and has served in Gan-hwuy and other parts of China, 639-641.

Prevalence of the opium habit, 642, 658; evil effects of opium smoking, 643, 656-657, 668-672.

Public opinion in China as to opium smoking, 644, 661-662.

Opium not taken in moderation, 645.

Extent to which Indian and native-grown opium are respectively consumed in Gan-hwuy, 646.

Feeling of hostility of Chinese towards British partly due to connexion of British Government with opium trade, 647, 648, 655, 656; feeling of the common people towards missionaries, 649, 650.

Considers that Government should prohibit the export of opium from India, 650; it is the only way out of the difficulty from a missionary's point of view, 651-654; and would, in his opinion, induce the Chinese to put down the growth of native poppy, 659, 660; consumers of opium not permitted to join native Protestant churches, 662-667.



X 2 FEB 1967

